A. A. R. MECHANICAL DIVISION CONVENTION PROCEEDINGS NUMBER

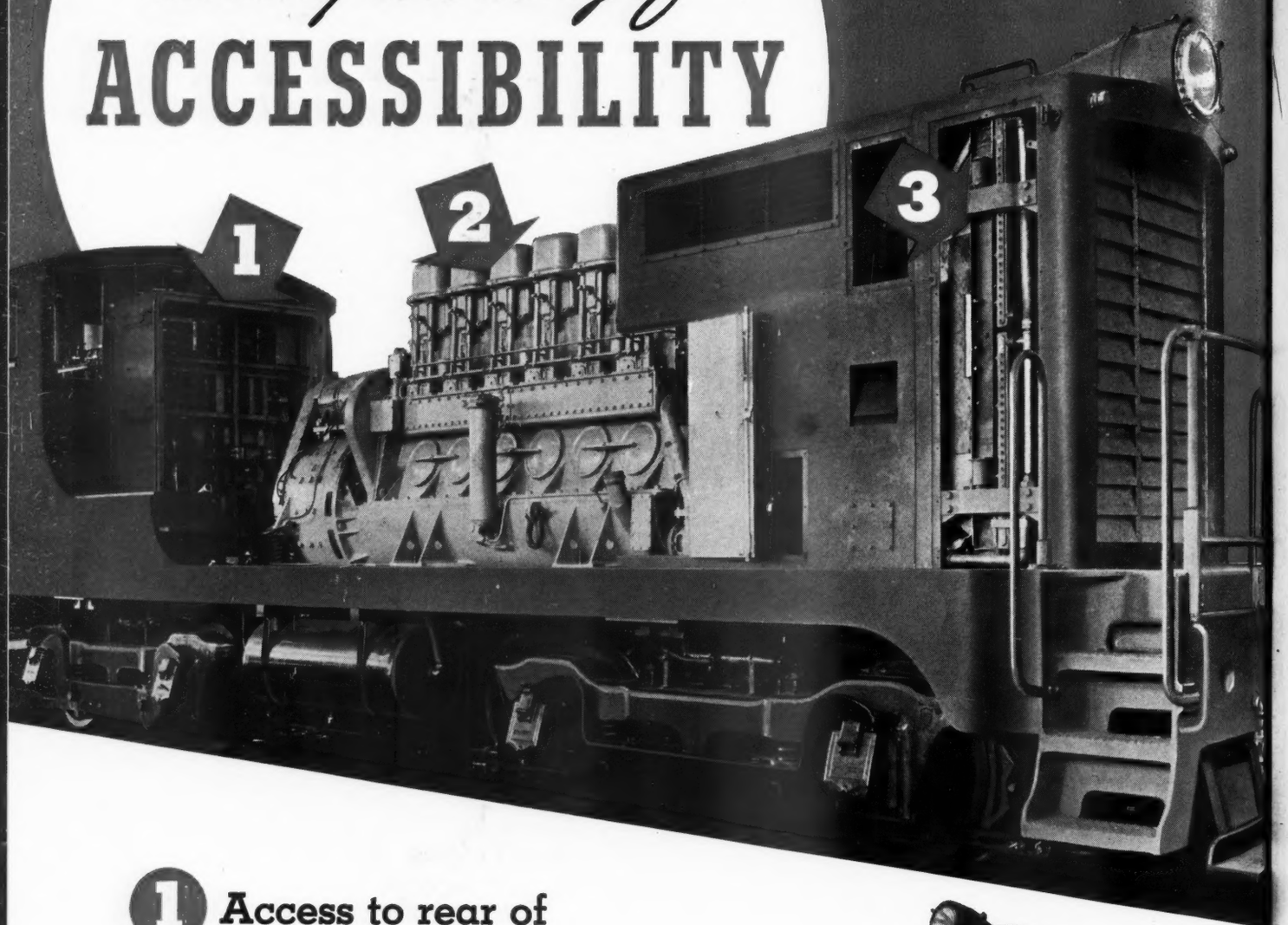
June 28, 1941

Railway Age

Founded in 1856

BALDWIN *Diesel-Electrics*

AN UNUSUAL PICTURE
telling the story of
ACCESSIBILITY



1 Access to rear of electrical control compartment

2 Access for heavy overhaul

3 Access to radiators

Baldwin Diesel-Electrics are powered with De La Vergne 4-cycle Diesel engines. Westinghouse Electrical Transmission.

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THE BALDWIN LOCOMOTIVE WORKS

Philadelphia

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U. S. Patent Office.

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In This Issue

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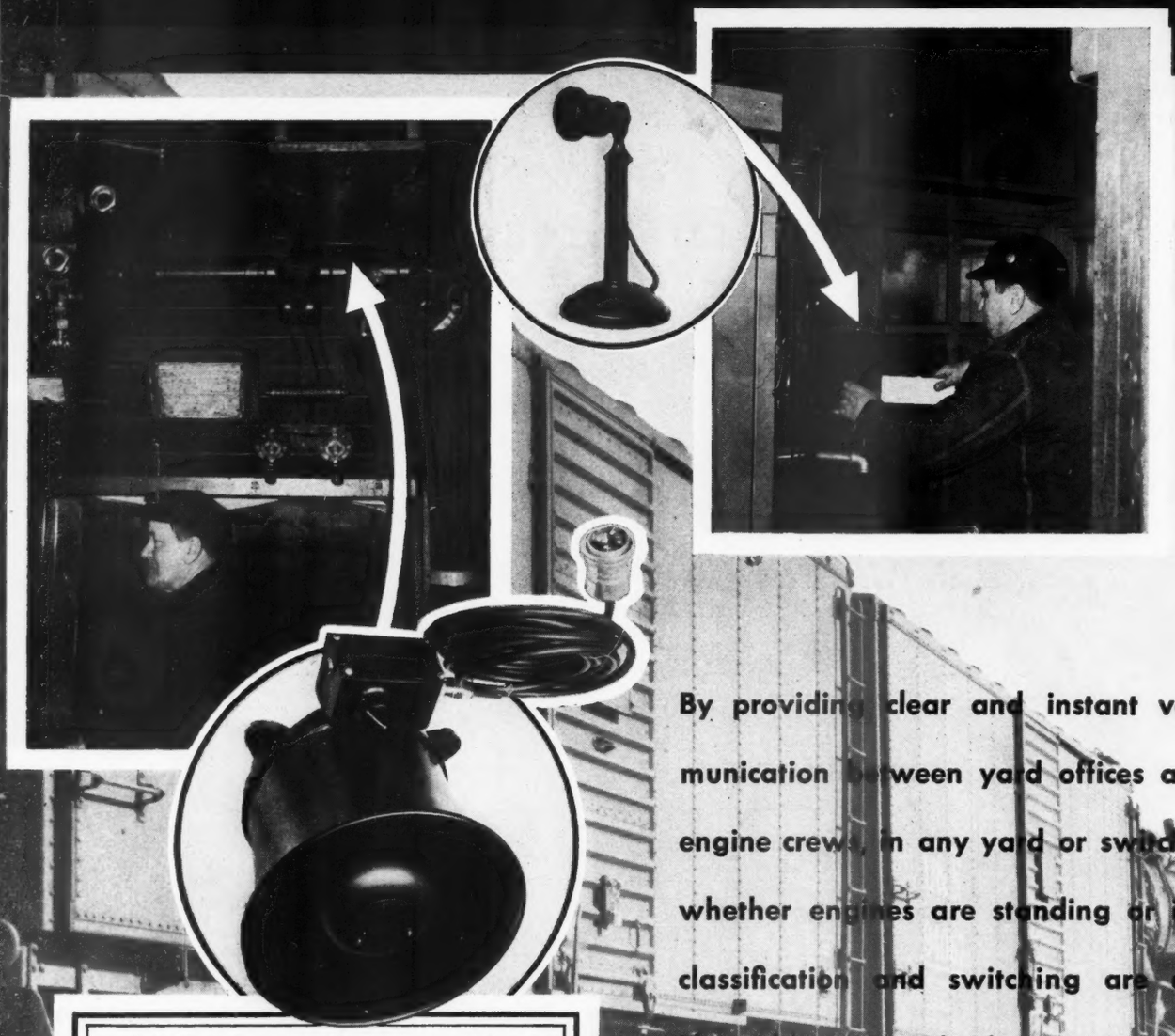
"Union" YARD COMMUNICATION SYSTEM



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RAILWAY AGE

Ignorance of Wage Economics Imperils Employees' Security

It seems far from probable that the leaders of the unions would now be demanding an average increase of 41 per cent in railway wages if the rank-and-file of employees had in their possession the facts of the railways' competitive position; and realized how impossible it now is to take a wage increase out of the railroads without making much worse the threat to railroad employment which is already looming, the moment the military crisis ends.

During and subsequent to the last war, when the railways were not subject to such outside competition as now, the unions succeeded in getting the number of employees increased from an average of 1,732,876 in 1917 to 2,022,832 in 1920, and the total payroll from 1,740 million dollars in 1917 to 3,700 million in 1920. But when business slumped in 1921 and 1922 the number of employees was reduced in 1922 to 1,626,834 and the payroll to 2,641 million. Again in 1937, when business was poor and the railways were subject to much more competition, the unions succeeded in getting increases; but the average number of employees declined from 1,114,663 in 1937 to 939,171 in 1938 and the payroll from 1,985 million to 1,746 million; and even in 1941, in spite of the large increase of traffic, the number of employees has not yet increased to what it was in 1937. The railways want to increase, and actually are increasing the number of employees, especially to do needed maintenance work on their properties; but how much they can **increase their payroll by increasing the number of employees** is strictly limited by their gross earnings and their dire need for increased net earnings to carry out their large program of buying equipment and materials.

It is easier for the union chiefs to lead their followers into a course of action which accords with the natural prejudice of every man in favor of more money, than it is to instruct the union members wherein their long-run welfare lies. Such union leaders as might be inclined by their better nature to tell their members the true facts of the present situation are, doubtless, deterred by the certainty that such honest effort would subject them to demagogic attack from the Huey Longs of the labor movement.

A Review of Fundamentals

The main economic conditions surrounding railroad employment have been frequently and thoroughly discussed in these pages; and such detailed analysis as has heretofore been given needs no repetition. However, just as a quick review of this economic background for the benefit of the many railroad men who today are discussing this question in relation to recent union demands, the following summary is given:

1. Increases in the rate of railroad wages do not necessarily increase either the **share** of total railway revenues paid to labor, or the **total amount** of wages paid to railway labor. The figures for the past 20 years show—despite large variations in the rate of wages and even larger variations in total railway revenues—nevertheless, that, year in and year out, labor has received about 47 per cent of the total money the railroads have taken in. In no year in the past 20 was labor paid more than 50 per cent of what the railroads received from customers; and in no year did labor receive less than 45 per cent of railway revenues. Employment and the payroll increase when railway earnings increase, and decline when they decline.

2. From the above, it is evident that wage increases usually are simply money taken from the pockets of men whom the railroads would hire if they had earnings enough, and transferred to men high enough on the seniority roster to be sure of their jobs. This does not mean that wage increases are not, under some circum-

stances, justifiable—but it suggests that beef is not eaten without killing steers; and the beef-eaters ought not deceive themselves into thinking they are vegetarians.

Does a "Living Wage" to Capital Harm Labor?

3. Where "capital" loses, principally, from larger wages paid to labor is in the loss of the services of men who, but for increased wages for fewer men, would have been employed to do useful work. Some of these additional employees would be employed to provide increased train service or otherwise improving service to the public, thereby increasing total railroad traffic (and providing more revenues to be divided approximately 50-50 with still more employees). As the amount of earnings of "capital" increases, new and better equipment and facilities are provided, so that lower rates can be offered to shippers—thereby still further increasing the traffic the carriers can attract (with more revenues to be divided approximately 50-50 with the labor force). A reasonable profitability to "capital" (to secure a plentiful supply of it) is no loss to employees, but the only assurance they can have of continued public patronage of their industry—which is the only "job insurance" there is, when all is said and done.

4. The favorable conditions for the security of railroad employment, portrayed in the latter part of the foregoing paragraph, are the exact opposite of those which have prevailed on the railroads in the past decade. The investment in new and improved railroad equipment and facilities has been at a minimum (because of the unprofitability of railroad investment) at a time when the investment to modernize railroad competitors (highways, waterways, airways) has surpassed all records. Railroads, in many aspects still of the pre-war model, have to compete with 1941-style highways. The railroads have not been able to reduce their rates on a large volume of competitive traffic; instead their higher labor costs (such as the 1937 wage increase) have forced them to increase their charges. The high level of wages and the burdensome working rules—especially in train and engine service—have doubtless given great temporary benefits to many employees; but they have done so at the expense of the jobs of junior employees; and have kept the railroads partially obsolescent and costly to operate at a time when competition is seriously threatening **their future employing power.**

Why the Future Looks So Dark

5. The serious competitive conditions which the railroads have suffered for the past decade promise to be greatly aggravated immediately the present military crisis subsides, for the following reasons: (a) the inevitable decline in traffic; (b) the threat of the New Deal to embark on large-scale superhighway construction; (c) the effort of the New Deal to jam the St. Lawrence Seaway through Congress, fraudulently labeled as a "defense" measure; (d) the political build-up now being prepared to convert the wartime airplane industry into the production of subsidized commercial airplanes. The decline in railroad traffic and gross earnings from 1929 to 1933 caused a loss of almost 700,000 railroad jobs—with average hourly railway wages in 1933 at 5½ per cent **below** the 1929 level. By comparison, how much loss of employment could we expect when the post-defense slump comes—if the situation were aggravated by hourly wages 41 per cent **above** the present level, which already is 13 per cent higher than in 1929 and 19 per cent above 1933?

6. Even many of the "old heads" will lose if the present competitive situation of the railroads is allowed further to deteriorate. **They will lose because wherewithal to pay their pensions will be lacking.** The monthly publication of the Brotherhood of Locomotive Engineers has acknowledged the dependence of railroad pensions upon the maintenance of a substantial level of railroad employment, which is one of the reasons that publication is so ably opposing the St. Lawrence Seaway. Well, Sirs and Brothers, a high level of railroad wages will hit railroad employment harder when the post-defense slump comes than the St. Lawrence Seaway will hit it—and with a corresponding threat to railway pensions.

Where the Big Money Is Going

So much for the basic economic factors in the railway wage situation. To turn now to some further more specific inspection of this picture: There is additional information which needs consideration in connection with that part of the wage demands which concern passenger and freight enginemen and trainmen; and the counterclaims of the railroads for modification of the working rules enjoyed by these employees.

It must be borne in mind in considering the demands of the engineers, firemen, conductors and brakemen that they have the "dual basis" of pay. That is, the basis of a day's pay in road freight service is "8 hours or less—100 miles or less." Therefore, if the employees make a run of 100 miles or less in less than 8 hours—and it does not matter how many hours less—they receive a full day's pay. In through passenger service the method of determining pay is the same, except that for engineers and firemen in such service "5 hours or less—100 miles or less" constitutes a day's work for purposes of pay; while for conductors and brakemen in such service "7½ hours or less—150 miles or less"—is the basis for a day's pay. While this "dual basis" of pay has been in effect, there have been great increases in the average speeds of both freight and passenger trains—with the result that there have occurred corresponding reductions in the number of hours required to run most trains the required distances of 100 miles or 150 miles. And in consequence of these reductions in the number of hours required by engineers, firemen, conductors and brakemen to earn a day's pay there have

been great increases in their average earnings per hour actually worked.

Great Increase in Enginemen's and Trainmen's Hourly Earnings

The accompanying table shows the average "straight-time" hourly earnings, 1926 to 1940, of all enginemen (engineers and firemen) and trainmen (conductors and brakemen) grouped according to classes of service. (By "straight-time" is meant time worked exclusive of overtime). It will be noted from this table (and from Chart 1 which gives the same data in graphic form) that the average pay per hour of passenger train employees rose 45 cents, or 39 per cent, from 1926 to 1940. Through freight wages per hour climbed an average of 39 cents, or 46 per cent—while the increase in the average hourly local freight service wage was 18 cents, or 22 per cent, and, in yard service, only 12 cents, or 14.5 per cent. The so-called "basic" increases in wages received by these classes of employees have been approximately the same, but observe the difference in the results!

Straight Time Hourly Earnings of Trainmen and Enginemen

Year	Passenger	Through Freight	Local Freight	Yard
1926	$1.16	$.85	$.81	$.82
1927	1.21	.89	.84	.85
1928	1.25	.93	.85	.87
1929	1.29	.97	.87	.87
1930	1.31	1.00	.88	.88
1931	1.34	1.06	.90	.88
1932	1.24	1.00	.83	.80
1933	1.24	.99	.82	.79
1934	1.27	1.01	.83	.80
1935	1.40	1.11	.91	.87
1936	1.43	1.16	.91	.88
1937	1.48	1.14	.93	.89
1938	1.56	1.24	.99	.93
1939	1.59	1.24	.99	.94
1940	1.61	1.24	.99	.94

What has happened, of course, is that the benefit of the greatly increased speeds of through freight and passenger trains has been secured by about 13 per cent of all railway employees who in March received 21 per cent of the total pay—instead of being shared with railway patrons, or with railway investors, or with other railroad employees, any one or all of which classes have quite as clear an economic and moral claim to a share in the benefits of improved efficiency of railway operation and service as have this 13 per cent of employees.

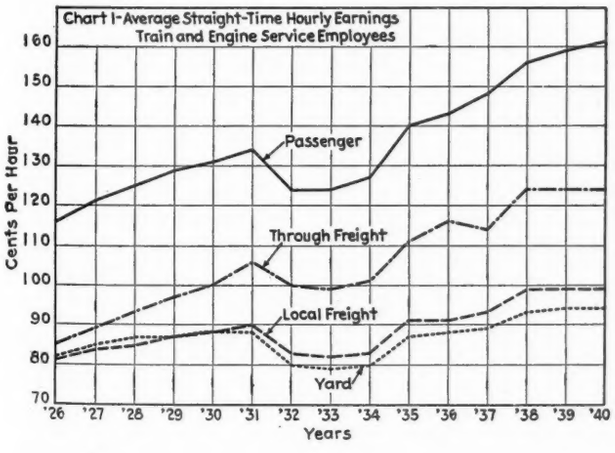
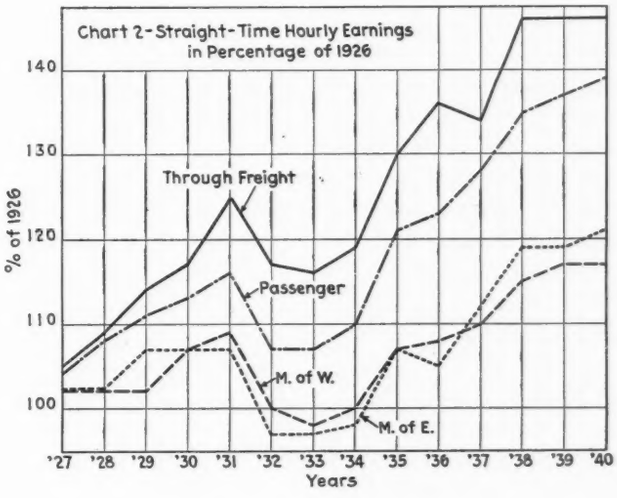


Chart 2 portrays, in percentages of 1926, the hourly earnings of passenger and through freight employees (whose earnings are affected by train speeds) in comparison with hourly-paid employees in the maintenance of way and maintenance of equipment departments. It is well known that these two maintenance departments include most of the employees who have benefited from the minimum wage policy of the federal government. Nevertheless, the average hourly wage of through freight crews in 1940 was 46 per cent and that of passenger crews 39 per cent above the 1926 level—while the employees in the maintenance departments, who have received the largest **intentional** wage increases, have had their hourly pay increased by 21 per cent (maintenance of way) and 17 per cent (maintenance of equipment). The wages of the groups of employees which include the lowest paid have witnessed the highest paid getting hourly percentage increases twice as great as theirs. And the increase of 30 per cent demanded for the "operating" employees would make the average hourly pay of passenger crews 81 per cent higher and that of through freight train crews 90 per cent higher than in 1926.



It is true, of course, that the reduction in the number of hours they work for a day's pay due to increased speeds of trains has not boosted the average daily, weekly or annual pay of enginemen and trainmen as it has their average hourly pay. But that it has failed to do so has been principally due to the policy of their labor unions in limiting the number of **miles** they can run in a month—and consequently the number of **hours** they can work in a month; the purpose being to prevent them from running up so much mileage, and consequently so much earnings, in a month as to foreclose any argument by labor union leaders for an advance in their pay.

The average "straight-time" earnings per hour of passenger trainmen (both conductors and brakemen) in

March was $1.61. If all of them worked twenty 8-hour days a month and were paid for the 160 hours at that hourly rate, the average monthly pay of all of them would be $258, and their average annual earnings $3,100; and an increase of 30 per cent would increase these figures to $335 a month and $4,025 a year.

The "Gravy" One Engineer Gets

There are many instances in which, for working much less than this, individual employees get much more. For example, a passenger locomotive engineer on a western railway is now paid $8.67 for every hour he actually works; but his union so restricts the **mileage** he can make monthly that he actually works only 43 hours a month, for which he receives $373 a month, or $4,476 a year. The proposed advance of 30 per cent would increase his hourly pay to $11.27; his monthly pay to $485, and his annual pay to $5,820—for working 43 hours a month! If, then, the restrictions of his labor union on his working were withdrawn and he were paid his hourly rate of $11.27 for working twenty 8-hour days a month, his average monthly pay would rise to $1,801 and his annual pay to $21,624! All that his union is actually asking, however, is that he shall be paid $5,820 a year for working, as now, **only 60 days a year**—in order that he may continue to have opportunity to enjoy his leisure, or engage in other profitable pursuits, **during the remaining 305 days a year!** This illustration is given to emphasize (1) why the unions restrict the amount their members may work, and (2) that, while the increase in train speeds has not increased the daily, monthly and annual earnings of train service employees as it has their hourly earnings, this increase of train speeds—together with the labor union restrictions on the amount they may work—has very greatly increased their leisure time.

Employees Who Prefer Leisure—and More Pay, Too

And apparently the members of the unions prefer this increased leisure to the much higher earnings that they could make at present rates of pay by working more; for otherwise they would force their unions to withdraw the restrictions upon how much they may work. The withdrawal of all such restrictions is one of the pending proposals of the railways; but the trouble about that, from the standpoint of the unions, is that if the restrictions were withdrawn the employees could, at present rates of pay, so greatly increase their daily, weekly and annual **earnings** as completely to destroy the argument for advances in their present rates of pay.

No approbrium, of course, attaches to train and engine service employees for the windfall that has come their way. On the other hand, it is precisely these highest-paid employees who enjoy most of the "featherbed" and "make-work" rules which are a major competitive handicap to the railroads—and which, consequently, tend to curtail the employment of all classes of railway labor. In the interest of the future health of the railway industry, and of its continued power to provide employment, it is essential that these rules be greatly modified, as the railway managements have proposed.

General observations on the economics of railroad employment, quite likely, do not make as deep an impression on many employees and the public as specific instances drawn from local situations and from division payrolls. Railway people of a studious and conscientious frame of mind, who understand these general principles and these nation-wide averages, could probably do their industry (and its future employing power) no greater service than to translate these general observations into terms of their own railroad or—better yet—of their own local division. The laborers in the vineyard of dispelling suicidal ignorance of the basic economics of railroad employment are far too few—considering the magnitude of the harvest.

Big Little Things

L. W. Baldwin, chief executive officer of the Missouri Pacific Lines, made a profound impression upon the members of the Mechanical Division, A. A. R., at the opening of their annual meeting at St. Louis last week. Not that his address was at all spectacular or dramatic. Rather, it was the quiet conviction and the intimate way in which he discussed practical problems in such terms that they knew, he knew, what he was talking about. The railroads are going to make good in the emergency, no doubt of that; but it will require all the ingenuity and common sense they can summon.

True, the railroads in their fight to survive, have made tremendous investments since the first World War; investments which now promise to bear fruit. But, more than that! Patiently, but persistently they have been perfecting their equipment, facilities and organizations. Chairman Walter Flynn, in his address, stressed the hard and constructive effort that the Mechanical Division and its committees have made to improve the standards and recommended practices. This has required much intensive research, in which the railway supply industry has co-operated. Moreover, the related industry has developed new materials, new machinery and new equipment better to meet rapidly changing technological and economic conditions and the much more rigorous requirements of present-day service.

Admittedly the railroads are in need of more freight carrying capacity to meet the late summer and fall peak load. They have many cars and locomotives on order and the builders are doing their level best to make good on the deliveries, in spite of the difficulties in securing material and skilled labor because of the heavy demands from abroad, in addition to our own national defense program.

There are other ways, however, by which additional freight car-days of service may be supplied. Class A cars are required for handling grain as well as much

other merchandise. Mr. Baldwin told of large numbers of B cars he had noted in looking over car reports. Investigation developed that this was due to comparatively slight defects that were not corrected when there was a surplus of equipment available. Several thousands of such cars were raised to A rating by the expenditure of about $25, and in no case in excess of $50 per car.

Expediting freight car repairs can also increase the available car-days service of the present equipment. Five per cent was suggested; no mean achievement when demands for the equipment are at a maximum.

One practical car man suggested to a little group after the meeting that thousands of freight cars might be kept available for high grade service, if, before contaminating materials were loaded in them, some sort of inexpensive temporary lining was applied—or, as he termed it, a temporary container was used. From his practical experience he felt there was no question about the success of the project, if some one in authority would take hold of it and push it. Be that as it may, there is a lot of room for the exercise of ingenuity and common sense. If each mechanical department officer and supervisor could do just a little better in his shop, or engine-house, or repair yard, the cumulative effect of this individual effort would be enormous—and Mr. Baldwin told them so, although in not quite these words.

Having said this, it is only fair to express appreciation for the splendid performance of the mechanical department thus far this year. It has been excellent training for the still greater task which lies ahead.

Oil and Transportation

There isn't any point, in providing for the national defense, to do the job in a manner calculated to make post-crisis adjustments as difficult as possible. The oil people have seized upon the national emergency, and the diversion of tank vessels to the supply of Britain, as a favorable opportunity to secure governmental support for the construction of pipe lines—the "public convenience and necessity" of which, in time of peace, is, at least, questionable.

There is much to support the contention that tank vessels (moving upon the open sea) are a cheaper form of transportation than either the pipe lines or the railroads can provide. The alleged "economy" of the oil industry's barges on the inland waterways, of course, is merely an *apparent* economy. It is cheap for the oil companies, because the taxpayers have obligingly built hundreds of millions of dollars of waterways (used, almost exclusively, by the oil industry); upon which no toll or rental whatever is charged.

There is much opinion to the effect that pipe lines —aside from any "inherent advantages" which they might have over railroads—are favored by some oil people primarily for the monopoly advantages they give the large companies over the small ones. And the hurried building of pipe lines at this time may simply serve to complicate the problem of excess transportation facilities which the country will face at the war's close.

It is at least worth examining whether intensive use of available tank cars on the railroads, moving oil in trainload lots, might not obviate the necessity for the construction of *some* of the pipe lines now being hysterically proposed. The large number of tank vessels now being built because of the military necessities of the country will, probably, all come back into the domestic transportation picture the moment the defense effort ceases.

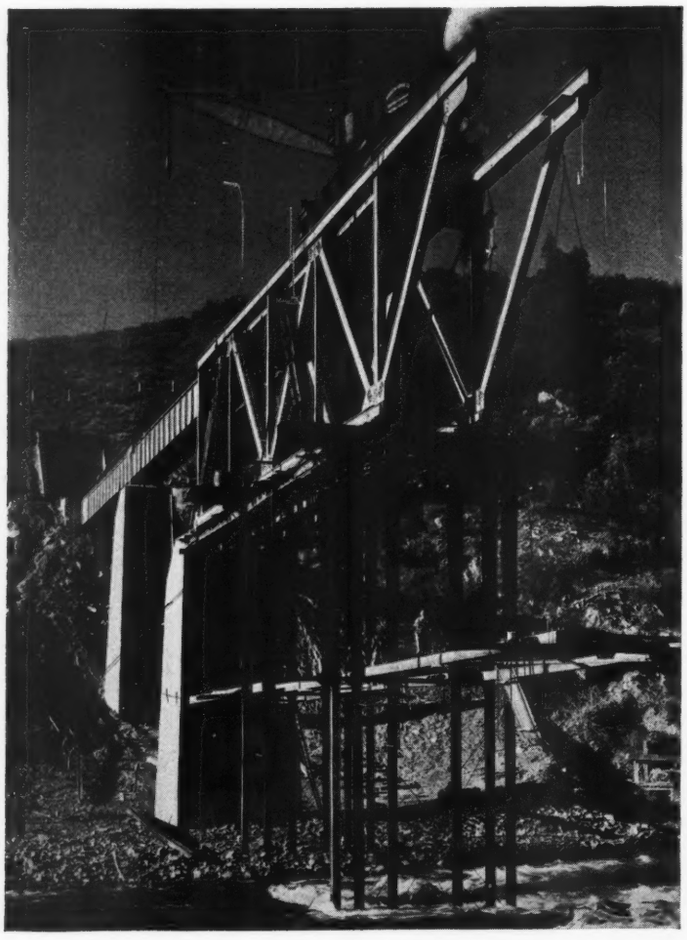
It is poor economy to sink large quantities of capital in facilities which are going to be needed for only a short period. Suppose there are two methods of doing a particular job—one entailing an investment of $1,000,000 and an annual operating cost of $200,000; and the other, an investment of $2,000,000 and an operating cost of only $100,000. Obviously the second alternative is the more economical of the two *provided it is going to be kept in operation over a considerable period*. But suppose, on the other hand, that the need for either facility will cease in two or three years. In that event, it would certainly be the part of wisdom to adopt the method with the high operating and the low capital costs. At the end of three years, the lower-cost facility would have cost $300,000 more in operating expenses, but there would be only $1,000,000 of plant to junk, whereas the other method would waste an excess of $1,000,000 in plant to offset its lower operating expenses.

If the railroads were to tackle the handling of a part of the oil formerly handled by tank vessels on an "added-cost trainload" basis, there appears to be little doubt that a very favorable rate could be made. Whether it would be to the carriers' advantage to offer such a rate is a point about which opinions undoubtedly differ widely. Even if relatively high rates were charged, however, this would be no injustice to the oil companies. (Because, just consider the huge investment in inland waterways now being used by this industry toll-free; and the "savings" from which the industry does not pass on to consumers in lower prices, but pockets as extra profit.)

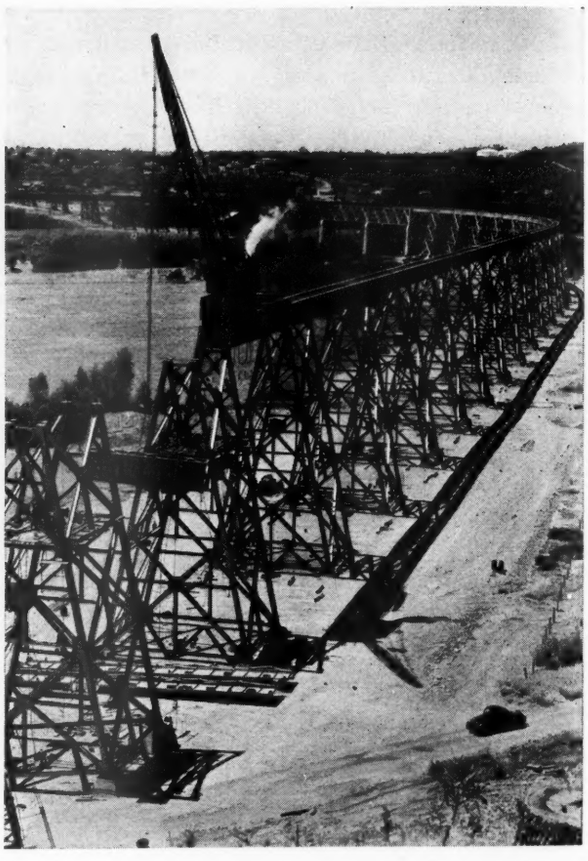
Transportation policies with far-reaching permanent effect are being decided in Washington every day with light-hearted disregard of their ultimate consequences. The oil industry has virtually abandoned genuine common carrier transportation; and the loss of this *volume* further runs up the unit costs of common carriers above what they would be with larger volume. The "little fellow" in business who cannot afford to provide his own transportation facilities finds himself ever and ever more disadvantaged in competition with large enterprises which are in a position to use the "cheap" transportation, provided by taxpayers' help.

A nation can neither be aided in winning a war nor in contriving a prosperous peace so long as it acts uneconomically, as this nation persists in doing about the vital business of transportation. "It seemed a good idea at the time" is still the governmental slogan for its hit-or-miss treatment of this vital business.

Bridge



The Third Crossing of the Sacramento Has One 200-Ft. Simple Deck Truss Span and Six 90-Ft. Simple Deck Plate Girder Spans, With a Combined Length of 758 Ft.



The First Crossing of the Sacramento, at Redding, Cal., On a Long Sweeping Curve, Has an Overall Length of 4,347 Ft. and Spans the River at a Height of Approximately 100 Ft.

BRIDGES, including more than 230 waterway structures, from the highest double-deck railway-highway bridge in the world, with piers more than 350 ft. high, to numerous elliptical arch and rigid-frame box-type culverts and more than 130 pipe culverts up to 60 in. in diameter, comprise one of the outstanding features of the 30.1 mile relocation of the Southern Pacific's San Francisco-Portland main line around Shasta reservoir, which the federal government is building in the Sacramento River valley in northern California as the key to its huge Central Valley flood control and irrigation project. In this line change work, which will be completed early in 1942, there are a total of eight major bridge structures, with a combined length of 12,206 ft., one of these, over the Sacramento river, being 4,347 ft. long, and another, the high-level, double-deck railway-highway bridge, over the Pit river, having a railroad deck 2,753 ft. long and an overhead highway deck 3,587 ft. long. In addition, there are 6 single and double reinforced concrete arches with a combined length of 1,152 ft.; 79 reinforced concrete box culverts, with a combined length of 10,574 ft.; 55 precast reinforced concrete pipe culverts, with a total length of 3,338 ft.; 77 corrugated metal pipe culverts with an aggregate length of 5,716 ft.; and 6 thirty-inch corrugated metal pipe siphons to carry waterways beneath intersecting sections of the roadway.

Built for the most part in a rugged and inherently difficult country, with widely varying foundation conditions and subject to earthquake shocks and unusually heavy rainfall, the larger of these structures, and particularly the high-level double-deck railway-highway bridge over the Pit river, involved many unusual and interesting features of design and construction, including, in the case of the taller and more massive piers of the Pit river bridge, the artificial cooling of the concrete in their bases to preclude shrinkage cracks; their design to overcome hydrostatic buoyancy and to resist earthquake shocks, while at the same time employing a minimum of concrete; the use of 2-in. square reinforcing bars, butt welded into continuous lengths; and, in the case of the tallest pier, the installation of a series of electric stress-measuring devices beneath its base to permit subsequent observations of foundation pressures under service conditions.

As in the case of its substructure, there are many features of special interest relative to the superstructure of the Pit river bridge. These include the careful studies that were made to determine the most economical types and lengths of spans, which led to the use of a three-span cantilever section 1,625 ft. long; the extensive use of silicon steel in the trusses, railroad deck and bracing

Engineering Stands Out on Shasta Line Relocation

Eight major structures on new route of the Southern Pacific, with a combined length of nearly 2-⅓ miles, include piers 350 ft. high and many other unusual design and construction features

members; and several special structural details designed to improve appearance and to facilitate maintenance and painting.

Location of Major Bridges

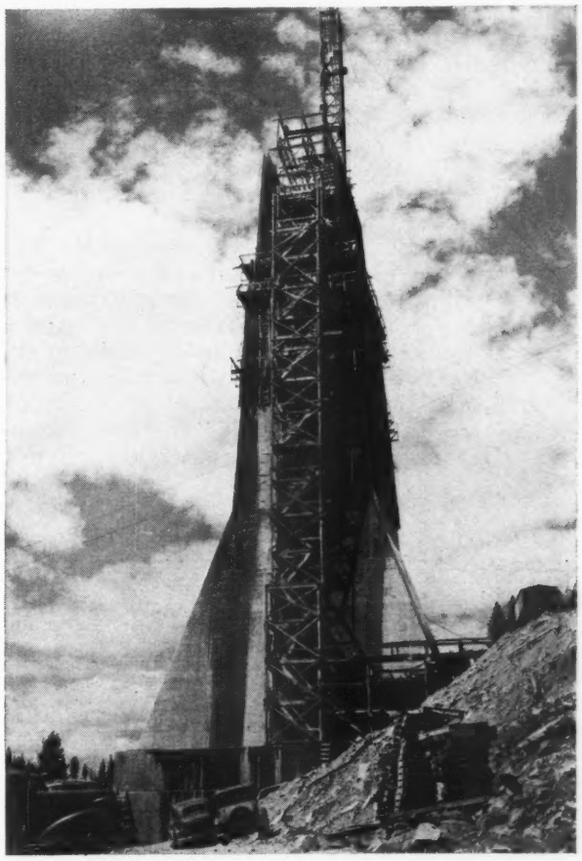
The new 30-mile line of the Southern Pacific, which is being built at the expense of the federal government under the direction of the Federal Bureau of Reclamation, extends from Delta, Cal, on the north, to Redding, Cal., on the south, and lies entirely east of the Sacramento River valley and the old line which traversed this valley. At Delta, at Elev. 1118, the new line takes off to the east of the old line and almost immediately swings over the Sacramento river on what is known as the Fourth crossing of that river, at Elev. 1120. Continuing southward for a distance of approximately ½ mile, it recrosses the Sacramento river at Elev. 1134. on what is known as the Third crossing of that river. From this point it rises on a maximum 0.7 per cent grade to a summit at Elev. 1162, and then drops on a maximum 0.5 per cent grade to a crossing of Doney creek at Elev. 1100, and immediately beyond, to another crossing of the Sacramento river, known as the Second crossing, at Elev. 1104. From this latter crossing, for a distance of 6 miles, the new line rises on grades varying up to 0.44 per cent to its main summit at Elev. 1218, 12.1 miles from its starting point, within this distance passing over Salt creek and a branch of O'Brien creek.

Over this summit, the line drops off on a gradient varying up to 0.7 per cent, and 3.6 miles from the summit crosses over the canyon of the Pit river, at Elev. 1104. Continuing over the long and high Pit River bridge on a 0.4 per cent grade downward, it continues downward through rolling country on a long varying grade of 0.9 per cent maximum to its last crossing of the Sacramento river, known as the First crossing, directly at Redding, and to a junction with the old line at Elev. 559, and 30.1 miles from its starting point.

In addition to the eight main bridge crossings and other numerous waterway openings, the new line required the construction of 12 tunnels with an aggregate length of 19,070 ft., and more than 5,630,000 cu. yd. of grading in cuts up to 102 ft. deep on their center lines, and fills approaching 105 ft. in height. The entire line change is estimated to cost approximately $18,000,000, including the Pit River bridge, which, alone, will cost in excess of $5,000,000.*

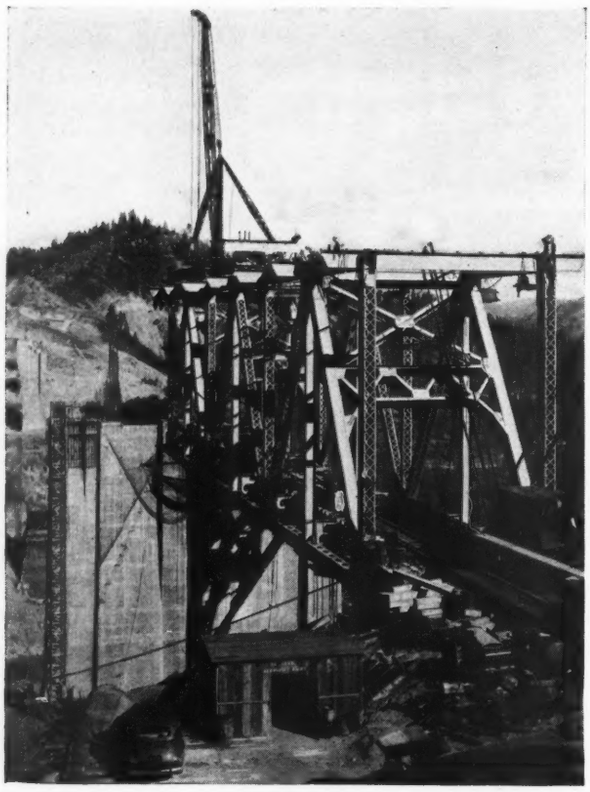
To present a general picture of the magnitude of the bridge work and of the general character of each of the structures involved, the following data are given relative to each of the structures. The Fourth crossing of the Sacramento river includes three 100-ft. simple deck plate girder spans, with a total length of 308 ft. It has a maximum height of approximately 70 ft. from low water level to base of rail and its construction involved the use of 1,200 cu. yd. of concrete and 238 tons of steel. The Third crossing of the Sacramento river has one 200-ft. simple deck truss span and six 90-ft. simple deck plate girders spans, with a combined length of 758 ft. This bridge has a maximum height to base of rail of approximately 100 ft., and its construction involved the use of 4,300 cu. yd. of concrete and approximately 750 tons of steel.

The bridge crossing of Doney creek is unique among the structures on the new line in that it is a three-span structure with continuous deck trusses, each of the spans



The Larger Piers of the Pit River Bridge, Which Will Be More Than 350 Ft. High, Involve a Number of Special Features of Design

* More detailed descriptions of the new line with regard to alinement, grades, tunnels, grading and grading methods, and operation, appeared in the *Railway Age* of June 22, 1940, page 1108; June 14, 1941, page 1054; and June 21, 1941, page 1108.



The Double-Deck Bridge Being Constructed Over the Pit River, With a Four-Lane Highway Above, Will Have a Three-Span Cantilever Section 1624 Ft. Long

being 192 ft. 6 in. long, giving the bridge as a whole a length of approximately 581 ft. This bridge has a maximum height of approximately 155 ft. from low water level to base of rail, and required the use of 6,600 cu. yd. of concrete and 900 tons of steel in its construction.

The Second crossing of the Sacramento river consists of three 200-ft. simple deck truss spans, flanked on one end by two 100-ft. simple deck plate girder spans, and on the other end by two 109-ft. 6-in. simple deck plate girder spans, and has an overall length of 1040 ft. This bridge has a maximum height of approximately 200 ft. to base of rail, and its construction called for the use of 21,400 cu. yd. of concrete and 1,480 tons of steel.

The bridge over Salt creek includes four 175-ft. simple deck truss spans, three 100-ft. simple deck plate girder spans and four 90-ft. simple deck plate girder spans, with an overall length of 1,391 ft. This bridge, with a maximum height of approximately 165 ft. above the creek bed, involved the use of 27,900 cu. yd. of concrete and 1,740 tons of steel in its construction. The O'Brien Creek bridge has two 200-ft. simple deck truss spans and six 100-ft. simple deck plate girder spans, with a total length of 1028 ft. and a maximum height of approximately 180 ft. Its construction called for the use of 13,200 cu. yd. of concrete and approximately 1,420 tons of steel.

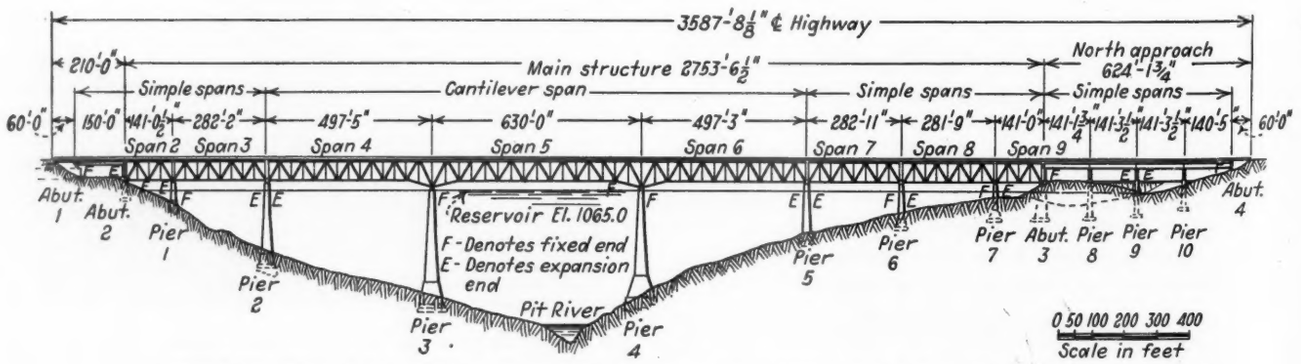
One Bridge 4,347 Ft. Long

The remaining major bridges on the new line include the high-level Pit River bridge, which will be described later, and the First crossing of the Sacramento river, at Redding. The latter bridge, which is the longest of the structures, and, for the most part, on a long sweeping curve, includes three simple deck truss spans directly over the river channel, each 165 ft. long; an 894-ft. south approach viaduct, consisting of a series of deck girder and tower girder spans; and a 2,946-ft. north approach viaduct, consisting, like the south approach, of a series of deck girder and tower girder spans. The two approaches include a total of 71 spans, and the overall length of the bridge is 4,347 ft., while its maximum height to base of rail is approximately 100 ft. Its construction required the use of 12,800 cu. yd. of concrete and 5,910 tons of steel.

All of the main bridges on the new line are single-track structures, with the exception of the Pit River bridge, which is double tracked, with a 50-ft. roadway above. All of the structures were designed essentially in accordance with the specifications for steel railway bridges of the American Railway Engineering Association, to carry Cooper's E-72 railroad loading, the single exception being that of the Pit River bridge, which, in addition to the railroad loading, was designed to carry an H-20 highway loading. More specifically in connection with the design of this latter bridge, only 90 per cent of the E-72 loading was used on each track when both tracks were considered loaded, and only 85 per cent of the E-72 loading was applied in design when the highway loading was considered along with the loading of both tracks.

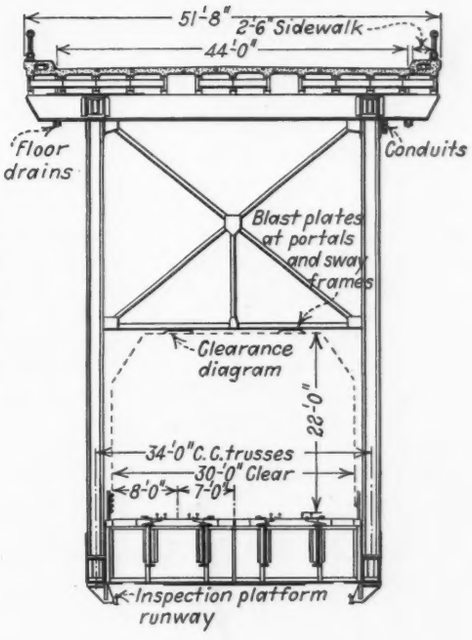
The trusses of all of the bridge structures are of the Warren type, and all of the spans are carried on reinforced concrete piers, except in the case of the long approaches to the main river spans of the First crossing of the Sacramento river, where the superstructure is carried on steel towers supported on concrete pedestal-type footings. In all cases, the span lengths and types of spans employed, that is, whether simple, continuous or cantilevered, were based on careful economic studies of the relation between pier and superstructure costs, giving due consideration to pier footing conditions and the cost of steel fabrication, and, in addition, in some cases, to the appearance of the completed structures.

The piers of all of the bridges, in addition to being



Sketch Elevation of the Double-Deck, Two Track and Highway Bridge, Being Built Over the Pit River

designed for normal dead and live loads and wind action, and in the case of the Pit River bridge, hydrostatic pressure and wave action as well, were designed to withstand earthquake shocks. In the latter regard, extensive mathematical studies and shaking table investigations conducted by the Bureau of Reclamation in its laboratories at Denver, Colo., showed that earthquake shocks do not tip over piers, but rather that, under the vibrating movements of earthquakes, in which the forces reverse themselves before the mass of the pier can follow the movement, piers merely rock on their bases. In designing to resist the horizontal forces of earthquakes, these forces were considered as applied to the bridge superstructure and railroad loading, as well as to the pier itself and to any water surrounding it.



Typical Cross Section of the Double - Deck Pit River Bridge, Showing the Four-Lane Highway Over the Two-Track Railroad Deck

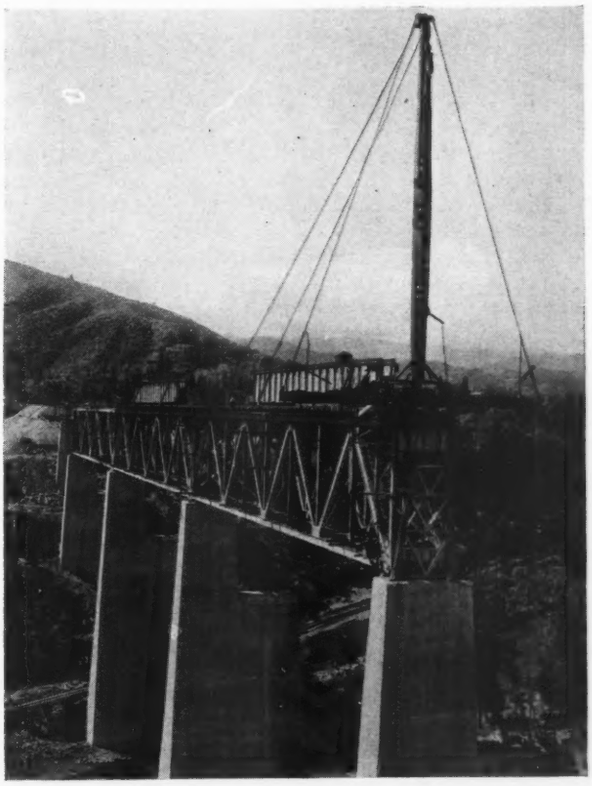
The Pit River Bridge

Outstanding among the bridges on the new line is the double-deck Pit River bridge, with its railroad deck 2,753 ft. long and its highway deck 3,587 ft. long, and with its largest piers more than 350 ft. high, placing the highway deck approximately 500 ft. above the river bed. The main part of this bridge, as shown in one of the accompanying illustrations, includes eight main spans, these, being, from north to south, in order, a 141-ft. simple through truss span; a 282-ft. simple through truss span; a 283-ft. simple through truss span; a three-span cantilever section with a 630-ft. center span, and two anchor spans, each 497 ft. long; a 282-ft. simple through truss span; and a 141-ft. simple through truss span. In addition, the highway deck has four deck girder approach spans at the north end, each 140 or 141 ft. long, and one deck girder approach span at the south end, 150 ft. long. The highway deck throughout is more than 50 ft. above the railroad deck. The construction of the bridge, when completed, exclusive of its approaches, will involve the use of 100,000 cu. yd. of concrete and 18,000 tons of steel.

Three separate locations were studied carefully before the final site of this bridge was decided upon, consideration being given to foundation conditions and to bridge design and construction costs, as well as, of course, to the effect of each location upon the alinement and grades of the railroad each side of the bridge. Having decided upon a site, several arrangements of span lengths and piers were studied and analyzed carefully. In this study, three different arrangements of cantilever spans were considered, all with anchor spans of equal length, but with center spans of different lengths. Study of the costs involved, including substructures, showed that the suspended span should be approximately 25 per cent longer than the anchor arm spans, and, while giving this finding full consideration, the suspended span was made 394 ft. long, somewhat shorter than that length based upon calculations, but providing a more desirable arrangement of truss panels in the main span.

Consideration was given to providing 2 two-span continuous trusses in the structure, instead of the cantilever arrangement adopted, as well as to 1 three-span continuous truss. However, both of these alternate arrangements proved less economical than the cantilever arrangement adopted, largely due to greater substructure costs. The higher substructure costs involved in the continuous span arrangements came about largely through the fact that with continuous spans, one pier must be designed to resist all of the horizontal forces resulting from train operation and braking, whereas in the case of cantilever construction, these same forces are absorbed by two piers.

Following the determination of the general type of structure to be built, the most desirable panel lengths, depth of trusses and spread between trusses, were established. The trusses in the different spans are 34 ft. apart, center to center, and their depths, center to center of chords, vary from 57 ft. in the case of the simple spans, to 87 ft. in the case of the cantilever spans directly over piers No. 3 and 4, where the greater depth proved more economical. Studies showed that the most economical panel length was 35 ft., but it was clear that this length could be increased materially without causing an appreciable increase in cost. Actually, a panel length of 34



The Second Crossing of the Sacramento River, With Seven Spans and an Overall Length of 1040 Ft., Has a Maximum Height of Approximately 200 Ft. to Base of Rail

ft. 8 in. was adopted for the simple spans, and was used likewise to a considerable extent in the anchor arms. Where the depth of the trusses increases on both sides of piers No. 3 and 4, a panel length of 39 ft. 4½ in. was employed to produce better appearance.

The grade of the railroad deck is 0.4 per cent descending to the south, as is also that of the lower chord throughout, except for the breaks at piers No. 3 and 4. In both the simple spans and the suspended span, the top and bottom chords are parallel, but in the cantilever portions of the structure, the chords were flared apart to secure the needed increased depth of truss. Thus, as noted in the accompanying elevation of the bridge, the top chord, from Pier 2 to the expansion end of the suspended span, slopes upward relative to the bottom chord, and, from the fixed end of the suspended span, to Pier No. 5, slopes downwards relative to the bottom chord. The depth of the trusses could not be increased by making the bottom chord lower, because to do this would bring the lower portions of the trusses below the high-water level established for the Shasta reservoir.

Silicon Steel Used Extensively

All truss members of the bridge are built of plates and angles, with the angles turned inward to form box sections. Silicon steel, with its higher permissible unit stresses and, consequently, smaller sections, was used in all of the trusses except those of the relatively short 140-ft. spans. In these shorter spans, the computed size of sections, even in carbon steel, was not large enough to satisfy the requirements for minimum thickness of metal, so that there was nothing to be gained by the use of silicon steel. In these spans, therefore, carbon steel was used, consideration being given also to the fact that this steel is somewhat more economical to fabricate than silicon steel. For the same reasons, carbon steel was used in the portals, in the sway frames between trusses, and in the bottom laterals of the 140-ft. spans. One-inch rivets were used throughout, except at splices and gusset plates, where 1⅛-in. or 1¼-in. rivets were employed.

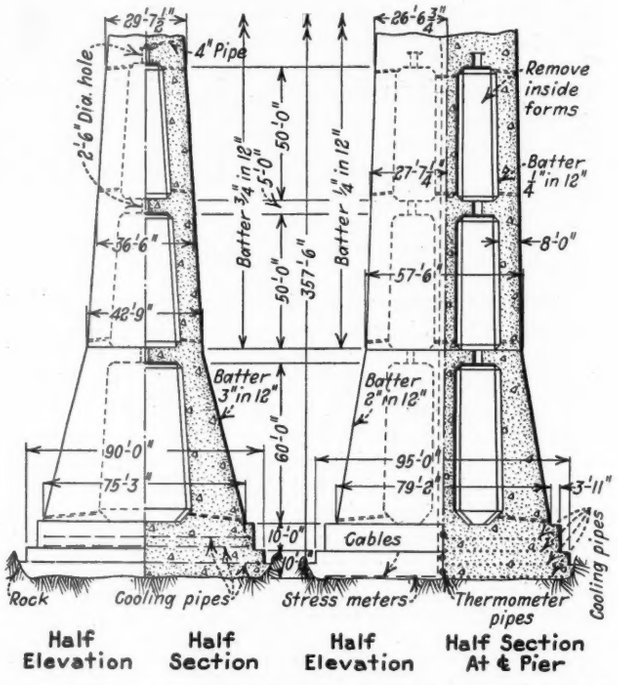
The largest chord section in the bridge is in the top chords of the anchor arms, this section being 3 ft. 6½ in. deep by 2 ft. 6½ in. wide. The largest gusset plate in the bridge is 17 ft. 2½ in. by 12 ft. 5 in.

One of the unusual features of the bridge is the use in the truss members of perforated plates in the place of the customary lacing. These plates have a series of elliptical holes in them, spaced approximately four feet apart, which are large enough to permit the entrance of a man for inspection, cleaning and painting work. The expansion bearings of the anchor arms over piers No. 2 and 5 are enclosed and are filled with oil, this design being adopted to keep the bearings in good working condition and free from dirt.

Lateral bracing between the top chords is the same depth as the chords themselves, and is being assembled largely by welding. Here, carbon steel is used in place of silicon steel because of the difficulty of welding the latter material. Lateral bracing between the bottom chords is in one plane only, except in those portions of the cantilever spans where the stresses in the bottom chords may be either tension or compression. Silicon steel is used in all of this bracing.

The floorbeams and stringers of the railroad deck are plate girders of silicon steel. In the highway deck, the floorbeams are either plate girders or rolled beams, and the stringers are all rolled beams. Silicon steel is used for the floorbeams, but carbon steel is used for the stringers, the latter being adopted because the higher units stresses and smaller cross sections that would have been permitted with the use of silicon steel, would have resulted in excessive deflections due to live loading.

An interesting feature of the railroad deck is the expansion bearing used for the stringers at the expansion end of the suspended span. This bearing is a semi-circular steel casting, 15 in. long, having its flat side



Half Sections and Elevations of the Lower Half of Pier No. 3 of the Pit River Bridge, Showing the Cellular Construction and Cooling Pipes Incorporated in the Massive Base

as the bearing for the ends of the stringers. The casting is suspended by an 1⅛-in. U-shaped annealed plate which is attached to the floorbeam.

To aid in the inspection and maintenance of the bridge, and particularly the under side of the railroad deck, three movable platforms are being provided beneath the structure. Each of these platforms will be carried by a car which runs on two rails, one suspended from each of the lower chords of the trusses. The track will be continuous through the bridge, except at piers No. 3 and 4, where this is not possible due to the breaks in the lower chords at these points. Walkways will be constructed between the segments of track each side of these points, making it possible to move continuously beneath the bridge. The cars to be provided in the movable platform arrangement will be approximately 14 ft. long by 6 ft. wide, and will be hand-propelled by means of a windlass and cable.

Details of the Deck Structure

On the two-track railroad deck of the bridge, which provides a clearance of 29 ft. 4 in. between flanking hand rails, the tracks are spaced 14 ft. center to center, with a walkway between them and along their outer sides. The tracks are laid with 131-lb. RE rail on double-shoulder tie plates, which, in turn, rest on Southern Pacific gage plates. All timber of the deck is Douglas fir, treated with chromated zinc chloride, all ties being 10 in. by 10 in. in cross section, and 10 ft. long, except every fourth tie which is 16 ft. long to act also as supports for the center and side walkways. All of the ties, as well as guard timbers, were bored for all spikes and bolts before treatment, and the ties are spaced four

inches apart by means of treated spacer blocks, with every second ties secured to the outer flanges of the stringers by means of hook bolts. The guard timbers are secured to alternate ties by means of the hook bolts that hold the ties to the stringers, and are lagged to intermediate ties.

A feature of the deck is the fact that it is covered almost throughout its width, between and outside the track rails, with non-slip floor plates, or with either 16-gage copper-bearing galvanized sheets or Transite asbestos-cement sheets, the sheets of both types being employed solely as a fire preventative measure. On each side of the deck, as well as intermediate between the tracks, there is a wide floor plate, ⅜ in. thick, continuous throughout the bridge. Between the outer floor plates and the guard timbers, and extending up and over these timbers, is a continuous covering of the copper-bearing steel or pure iron galvanized sheets, these same materials also completely covering the deck between the inner rail-type guard rails of each track. Between the guard timbers and the running rails of each track, and between the inner rail-type guard rails and the running rails of each track, 2-in. timber strips, lagged to the ties, cover the deck, which, in turn, are faced over the top with ⅜-in. sheets of Transite. Thus, the only part of the top surface of the entire railroad deck that is exposed is within the inter-track space, each side of the 4-ft. wide treaded walkway plate in this area.

Structural steel hand rails line both sides of the deck, the posts being lagged to the sides of the longer track ties. In addition to the protection which these afford, the hand rail on the downstream side of the bridge is equipped with four runs of 2½-in. pipe conduit for carrying signal and various other electrical circuits.

The track construction on the other bridges of the line change, although involving only a single track, is essentially similar to that on the Pit River bridge, except for the size of the ties employed, and for the fact that the decks are not protected with sheet metal and Transite.

Great Care Was Exercised in Installing the More Than 5,700 Lin. Ft. of Corrugated Metal Pipe on the New Line

These bridges employ 10-in. by 11½-in. ties on tangents and 10-in. by 11½-in. to 14½-in. ties on curves, superelevation being afforded by beveling the tops of the ties to suit conditions.

The substructure of the Pit River bridge is of special interest because of the exceptionally high piers supporting the cantilever spans—Piers 3 and 4—which are thought to be the tallest piers in the world, and also because of the special features of design and construction embodied in these piers, including cellular construction to economize in concrete and to minimize the buoyancy effect of surrounding water; the use of 2-in. square reinforcing bars in the faces; and the employment of artificial cooling of their bases to preclude shrinkage cracking in the large masses of concrete involved. The base of pier No. 3 covers an area 90 ft. by 95 ft., while that of Pier 4 has an area of 95 ft. by 95 ft.

Both piers No. 3 and 4 are more than 350 ft. in height, but the water level in the reservoir when full will be such that they will be submerged, except for their top two feet. In view of this submergence to which these piers will be subject, both of them were designed to take care of full hydrostatic uplift, and, in addition, both were designed to resist earthquake stresses, horizontal earthquake forces being considered as acting on the railroad live load, on the superstructure, on the water surrounding the piers, and on the piers themselves.

Pier No. 4 is slightly larger in volume than pier No. 3, but since both of these piers are of similar design and incorporate similar features of construction, the following details relative to pier No. 3 will suffice to indicate the character and features of both. This pier involves 25,000 cu. yd. of concrete and approximately 3,710,000 lb. of reinforcing steel. To economize in concrete, as mentioned previously, this pier, within a height of approximately 170 ft. above its base, contains three levels of cells, inter-connected and open to the pier faces by means of 4-in. pipe holes, whereby they can fill and drain with fluctuating water levels in the reservoir. These cells, in pier No. 3 alone, effected a saving of approximately 4,600 cu. yd. of concrete, or about 15.5 per cent of the total, and, in addition, as already pointed out, reduced materially the hydrostatic uplifting action on the pier with high stages in the reservoir.

2-In. Square Reinforcing Bars

Another unusual feature of these large piers is their employment of 2-in. square vertical reinforcing bars. In pier No. 4, four rows of these bars were required about the broad faces of the shaft near the base to resist the bending stresses caused by the combination of forces produced by earthquakes, wind, train braking, and the lateral sway of locomotives. These bars, which have 0.35 per cent carbon instead of the usual 0.40 per cent carbon, giving a yield point of 40,000 lb. per sq. in., have a minimum spacing of 8½ in. in rows parallel with the pier faces, and a minimum spacing of 6 in. between successive rows. The outer ring of bars has a minimum cover of 6 in. of concrete.

Since it was doubtful that the bars so spaced would develop adequate bond with the concrete if spliced in the usual manner by lapping, it was decided to butt-weld the ends of the bars together, precluding all laps. Employing bars in lengths up to 60 ft., therefore, all joints between them were electric-arc welded, the welds in the different bars being staggered in such manner that the steel at any cross section would not be reduced more than one-third if the welds at any level should fail. It was in consideration of these welds that bars of lower carbon content were employed, these bars having greater weldability than bars of the usual carbon content.

Massive Concrete Units Cooled Artificially

Unique in bridge pier construction also was the provision made in piers No. 2, 3 and 4 for cooling their bases artificially as construction progressed. In the case of each of these piers, the normally cool rock foundation, in contact with the large mass of concrete in the base, which it was known would develop a high temperature

through the chemical action of the cement and water, presented the possibility of large cracks developing in the concrete due to unequal shrinkage. It was to overcome this wide range of temperature between the rock footing and the base masonry that the artificial cooling was resorted to.

In the cooling arrangement employed, cooling pipes in a flat coil system were placed in a series of four 5-ft. lifts, extending from a level immediately above the bottom of the base to within about 5 ft. from the top of the base. Water for circulation in these coils was taken from the Pit river, and, when necessary during the summer months, was pumped through a special refrigerating plant built for the purpose, which had capacity for delivering 60 gal. of water per minute at 40 deg. F., from the river water at its highest summer temperature.

Since it was evident that the greatest range in temperature would normally be near the bottom of the pier base, because of its contact with the cool foundation rock, the longest period of artificial cooling was carried out in the lower levels of coils to reduce this spread in temperature as much as possible, and, thereby, the tendency towards shrinkage cracks. In the upper lifts of concrete, where it was known that the temperatures developed in successive lifts would not vary widely from those in preceding lifts, artificial cooling was not required to the same extent as in the lowest lifts. Therefore, taking advantage of this, the period of cooling in the successive lifts was varied from a period of 35 days in the lowest lift to 10 days in the highest.

Incidentally, to check and control the results being produced, thermometers, deeply imbedded in the base masonry but readable at the masonry face, were installed at various points.

Still another unique feature in connection with Pier 3 is the fact that, to determine ultimate pressures beneath its base, 12 electrical stress meters were installed at its foundation level. These meters are connected by cables extending up through the body of the pier to outlet boxes at the top of the pier, where instrument readings will be taken of foundation pressures under various service conditions.

The most interesting feature of the piers of the single-track bridges on the line relocation is the fact that certain of them, where the pier footings are below the low draw-down level of the reservoir, have been constructed for an eventual two-track superstructure to a height above low draw-down level. Above this level, they are brought up as single-track-deck shafts. Thus, these piers can be built up to carry a second track at a later date, if desired, without the difficulties that would be involved in establishing new foundations under water.

Erection

Steel erection on the various bridges has followed generally accepted practice to a large extent, employing pillar cranes, locomotive cranes and traveling derricks as best suited to the particular conditions encountered. In the long First crossing of the Sacramento, with its 74 simple and tower spans, all of the piers were built before any of the steel erection was begun, and, in general, the viaduct towers were hauled in by trucks and were erected by tractor-mounted pillar cranes from the ground. The longer girders and truss spans were erected by a locomotive crane from the bridge deck.

Falsework for the erection of the truss spans has consisted of H-beams driven as piles, above which other steel bents were placed. The steel beams used for piles had punched holes spaced closely along both sides, which permitted attaching caps at any height desired. This same practice was employed in erecting the trusses of certain of the other bridges, while in still other cases the falsework bents erected employed structural members to be used in subsequent spans.

For certain of the bridges, such as the Salt Creek bridge, all of the steel was brought to the bridge site on cars and was erected by cranes and derricks. At other points which were readily accessible by roads, and where it was desirable that the bridge work proceed without waiting until the track could be brought up, the steel was trucked to the site. This latter procedure was followed in the case of the O'Brien Creek bridge, with its two 200-ft. deck truss spans and six 100-ft. deck plate girder spans. Here, all steel, including the long girders, was trucked to the site from a railroad siding, the girders being set in position under the bridge and subsequently hoisted and set in place with a guy derrick.

When handling long girders and other large members into place, the guy derricks used were given added stability laterally through the employment of a needle beam, as shown in one of the accompanying illustrations. This beam, about 90 ft. long, was placed crosswise of the bridge and was used to take the side guys from the top of the derrick mast. The rear guy was carried some distance back on the structure, and the forward guy was usually run over to the bridge abutment ahead. The needle beam itself was lashed down, generally to the bottom of a pier, U-bolts having been cast in the concrete near the bottoms of the different piers for this purpose.

In handling long girders brought up from the rear, the derrick boom was first turned toward the rear and the girder picked up. Then the boom was raised until in a practically vertical position, touching the mast, following which, the boom and mast were turned around through 180 deg. and the boom lowered, lowering the girder out to reach the next pier. This reversing of the derrick was made only while the boom, with its load, was close to the mast, the girder passing between the mast and the side guy.

Many Smaller Waterway Openings

As in the case of the larger bridge structures, the many smaller waterway openings beneath the new line incorporate features of interest and were installed with the greatest care. The six reinforced concrete arches, for example, with their total length of 1,152 ft., were designed elliptical in section to save in concrete over that which would have been called for in the usual semi-circular design. Similarly, to effect economy, the 79 reinforced concrete box culverts on the line, with their combined length of 10,574 lin. ft., were constructed as rigid-frame structures, instead of simply reinforced boxes, without continuity of reinforcement; and, in addition, all of the 55 precast reinforced concrete pipe culverts and 77 corrugated metal pipe culverts, with their combined length of 9,054 ft., were installed with the greatest care. Care in this latter regard extended to the preparation of the bed; the tamping of the backfill with air tampers and with sheepsfoot rollers; the temporary strutting of the corrugated metal pipes of larger diameter; and the rolling of the cover over the completed structures. In the case of the corrugated metal pipe culverts, all of which were provided with paved inverts, a most successful method of strutting the larger pipes, without damage to the inverts, was adopted. This involved the use of a series of 1-in. boards and spreader blocks beneath the various struts, to spread the load over the invert paving, the 1-in. boards being separated from the paving by a layer of heavy roofing felt.

All of the concrete employed in the bridge substruc-

(*Continued on page 1187*)

A.A.R. Mechanical Division Works To Promote Defense Activities

Annual meeting at St. Louis discusses equipment conditions and suggests improvements essential to meet peak industrial and defense traffic requirements

THE procurement, maintenance, and use of an adequate supply of locomotive and car equipment to meet impending peak demands of both industrial and defense traffic, constituted the keynote of the annual meeting of the Association of American Railroads, Mechanical Division, which was held at the Hotel Jefferson, St. Louis, Mo., June 19 and 20. This keynote thought was present in almost every one of the individual addresses made by distinguished speakers and also in the committee reports, 11 of which were presented. The total registered attendance of about 550 members and guests was almost equally divided between railway men and representatives of railway equipment and supply companies.

Conspicuous among the speakers at this annual meeting of the Mechanical Division was L. W. Baldwin, chief executive officer, Missouri Pacific Lines, who welcomed the convention to St. Louis and made a challenging appeal for further co-operation between railway departments in attaining the degree of railway operating efficiency needed in the present emergency. The division was also addressed briefly by C. H. Buford, vice-president, Operations and Maintenance Department, Association of American Railroads; W. J. Patterson, member, Interstate Commerce Commission, and Roy V. Wright, managing editor, *Railway Age*.

The meeting was presided over by Chairman W. H. Flynn, general superintendent motive power and rolling stock, New York Central, and Vice-Chairman R. G. Henley, superintendent motive power, Norfolk & Western. These officers continue to serve until the regular meeting of the Division which will be held in June, 1942. Five new members were elected by a rising vote to fill vacancies in the General Committee as follows: H. B. Bowen, chief motive power and rolling stock, Canadian Pacific; E. B. Hall, chief mechanical officer, Chicago & North Western; H. H. Urbach, mechanical assistant to executive vice-president, Chicago, Burlington & Quincy; Geo. McCormick, general superintendent motive power,

W. H. Flynn, Chairman

R. G. Henley, Vice-Chairman

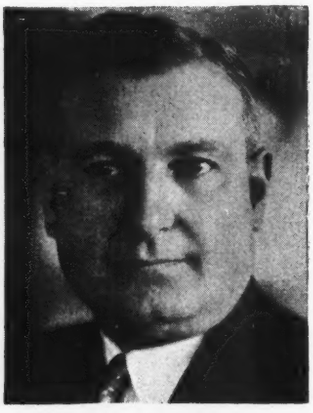
V. R. Hawthorne, Executive Vice-Chairman

Southern Pacific; and O. Jabelmann, vice-president, Research and Mechanical Standards, Union Pacific.

L. W. Baldwin Voices Confidence in Railroads

In welcoming the members and guests of the A. A. R. Mechanical Division to St. Louis, L. W. Baldwin, chief executive officer, Missouri Pacific, referred to his pleasant association with them of many years standing and that he could, therefore, talk to them not as strangers but as men who think and work along the same lines that he does. Mr. Baldwin expressed gratification at the accomplishments of the railways in recent strenuous years and said that the railways will meet and do all that is expected of them in the present defense emergency. Railroads have learned to do work better and get better materials and more production per man hour in repair shops than a decade ago. Efficient railroading is not magic but only plain common sense. As in every other business, he said, railroad men get out of their employment just what they put in.

D. S. Ellis



O. A. Garber

Referring to the impression which many people seem to have, unfortunately, that the railroads cannot handle expected traffic peaks, Mr. Baldwin said that he does not believe this and that cooperation between railroads, shippers and manufacturers will produce the desired results. He said, for example, that the loading of cars to full capacity would be equivalent to 100,000 additional cars over night. He suggested the handling of railroad material also in full cars, the movements being made with as little delay as possible enroute and at terminals. He said he does not question the need for the new car program, but much can be accomplished by increasing the speed of car movement, loading and unloading.

Mr. Baldwin stressed the importance of putting the present ownership of cars in good condition for use, especially when this can be done at relatively little expense. For example, on one road, out of an average of 30,000 cars, a total of 6,500 cars were raised from B to A class at an expenditure of $50 or less per car. Mechanical-department officers can also help by expediting car repairs and being sure that necessary repair materials are on hand before cars are taken out of service, which will increase the car supply at least five per cent.

With reference to motive power, Mr. Baldwin said that modern steam and Diesel locomotives have made a remarkable achievement from the point of view of increased reliability and efficiency in operation and that locomotive shop maintenance practices also have been substantially improved. He urged that neither locomotives nor cars be sent out on the road in such condition that they cannot make a successful trip. He urged the development of inspection methods sufficiently careful and comprehensive to assure this accomplishment. Mr. Baldwin said that cooperation must start with the staff officers who compare their mutual problems and take steps to make sure that all employees work together in harmony so far as possible.

Railroads must do a thorough job in cooperation to promote the defense program of the United States. Mr. Baldwin suggested that every possible assistance be extended to the war industries and said that if the American railroads will cooperate in this objective, they will perform a service of which they may well be proud. He stated that in the present emergency railroads should forget competition and help other roads to supply necessary transportation. They should work together as they are now being more severely tested and more closely watched than at any time since the World war.

G. C. Christy

H. B. Bowen

F. W. Hankins

J. Purcell

C. H. Buford Talks About Priorities

World conditions are changing rapidly and problems in this country are different from what we expected they would be even a few months ago. Our defense program started less than a year ago, and it cost four billion dollars in 1940. The expense is estimated at 17 billions for 1941 and at 23 billions for 1942. On top of this, we

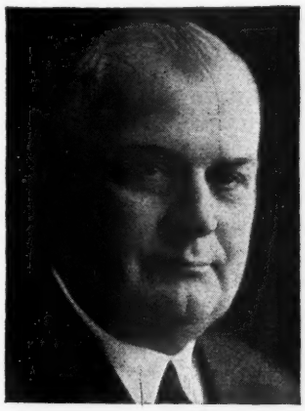
have the seven-billion-dollar lease-lend bill and about three and one-half billion dollars in British orders placed in this country. The need for transportation will increase. More transportation means more labor and material and it means a more intensive use of cars and locomotives.

Purchasing officers are now assembling information as to the amount of the various metals needed by the railroads for car and locomotive construction and maintenance. They will present this information to the Priority Division of the Office of Production Management at Washington, and will make every effort to get what you need, although they may not be able to get everything that you want. For example, it seems clear we are not going to obtain aluminum for the construction of new cars. We hope to get repair material needed for the units we now have. Other similar conditions will arise, and you will be advised promptly of the changes so you can make arrangements accordingly.

We have had difficulty in getting steel plates, shapes, and bars. Some railroad repair work has been delayed and some car construction has been shut down on this account. This week action has been taken to solve this problem.

Suggestions have been made that we explore the use of substitutes, and one of these is that we use wood instead of steel for the superstructure of cars. You probably know the answer before you investigate. In fact, I am sure that all of us who have been around cars for years have a fairly good idea of the answer. Regardless of how much we know or just what we think, we must make a thorough investigation, because the suggestion comes from high authority. If your study is thorough and your conclusions are sound, you will be in a better position to get the materials you need.

Under the stress of emergency, other suggestions may be made in the future. Some of these may come from



E. B. Hall

H. H. Urbach

people who are sincere but who know little of the service requirements or the details of your work. If any of these are referred to you, I urge that you handle them carefully and thoroughly and that you present the facts in as convincing a way as you can.

Do not let these new problems or questions disturb you and, above all, do not relax your endeavors still further to improve the standards and practices with respect to the equipment.

I could spend hours telling you about the methods used for estimating prospective business and railroad capacity. After I had taken that much of your time, you would know as much as anyone else—and you would not have the answer. No one knows how many cars of freight will be loaded in any future week and no one knows the exact number of cars and locomotives. We can tell how many cars we have handled in the past, but that does not mean that more or less can be handled in the future. No fixed standard can be set because there are too many conditions that can change. The safe thing is to figure that there will be more business than we expect. Let us assume that there is so much business we will have to turn cars and locomotives faster than we have ever done before. We have passed through many years of transportation surplus. To pass from this condition to the other extreme which we have assumed suggests a little self- analysis and a look at our subordinate officers.

Have we older men let this period of transportation surplus create habits or practices that must be changed? Have our younger officers had most of their training during this period of surplus? We may have to change our way of doing things, and spend some time with our young officers to get them lined up. All this requires work. I doubt if we can do the job by writing letters. It will take personal effort and meetings to get things lined up. It will take continuous pressure to accomplish the desired results.

G. McCormick

O. Jabelmann

When heavy business is moving any road failure causes serious delay. It is important that units be carefully inspected before they leave terminals.

There is an old saying that "familiarity breeds contempt." Those who work with cars and locomotives must keep this in mind. Explore the possibilities of longer engine runs and other means of getting more service hours out of each locomotive. Do not let cars lie around waiting to be repaired. Load and unload

A. C. Browning, Sec.

W. I. Cantley, Mech. Eng.

cars promptly. Make regular checks and line up some plan so you will know personally that a real job is being done.

I suggest that you be neither pessimists nor optimists —just keep a straight course and deal with facts. Meet the situations that arise in the same cool, efficient way that you have in the past and, when all this noise about big business is over, you will see another record of a job well done.

Chairman Flynn's Address

The rapid expansion and tremendous acceleration of the National Defense Program has brought our railroads face to face with the problem of keeping ahead of the steadily increasing demand for cars and locomotives. Approximately 165,000 new freight cars of modern designs have been ordered by American railroads during the past 16 months to augment their existing equipment, and railroad freight-car repair shops are the busiest they have been in years. Reduction in the number of bad-order freight cars is progressing rapidly and it is imperative that the work continue with all speed.

Many new locomotives—steam and Diesel—of suitable capacity for the service required and thoroughly modern in design have been ordered, and the number of serviceable existing locomotives is, through extensive locomotive repair-shop operations, being steadily increased.

Passenger equipment cars have a very important place in the program of defense. While many new cars have been ordered, it is essential that the maximum possible number of existing cars be made ready for service and so maintained.

The greater dependability in service of cars and locomotives in use today, due to improvements in designs, materials, mechanical devices and standards of maintenance, in the bringing about of which the Mechanical Division has been actively engaged for many years, will be of material aid to providing the quality of transportation that is necessary.

A number of years ago the Mechanical Division appointed a Committee on Car Construction with directions to design standard cars which would be acceptable for general use. Resulting from the excellent work of this committee, and in which valuable assistance was rendered by the American Railway Car Institute representing car manufacturing companies, highly satisfactory designs for several types of cars have been produced. Many thousands of cars have been built from these designs and practically all box and hopper cars now being built are substantially in accordance therewith. In emergencies like the present when freight cars of standard types must be built in volume, the availability of these standard designs greatly overcomes delays incidental to development work in engineering of details and greatly facilitates obtaining the material required in construction.

Designs of new steam locomotives incorporate many improvements tending to insure greater reliability and more efficient performance, with a decrease in engine-terminal maintenance and an increase in availability. Longer range in operation where possible is being obtained by the application of tenders with greater coal or greater water capacities, or both. The development and extent of use of Diesel-electric locomotives are also progressing very rapidly.

Since the last meeting of the division much needed assistance in the handling of the many important matters coming before it for immediate attention has been provided in the creation of the office of executive vice-chairman. V. R. Hawthorne, secretary for nearly 22 years, was appointed to this new position, and A. C. Browning, assistant secretary also for nearly 22 years, was appointed secretary.

At the last meeting of the division you approved the adoption of new or revised loading rules without their submission to letter ballot. As will be brought out in the report of the Committee on Loading Rules, this has proved to be a great aid to the committee and with distinct advantage both to the railroads and the shippers.

Remarks by Commissioner Patterson

At the closing session of the meeting, W. J. Patterson, member, Interstate Commerce Commission, expressed his commendation to the committees for preparing the fine reports. He took exception, however, to a few specific items included in some of the reports, one of which was the conclusions reached by the Committee on Brakes and Brake Equipment with respect to the cleaning of AB brake valves equipped with strainers of improved design, which stated the three-year cleaning period was not only feasible but could be further extended. He was of the opinion that the three-year period allowed by present regulations might be too long. The AB valves tested, he continued, did not have high mileage nor were they subjected to severe atmospheric conditions.

Mr. Patterson commented on two public notices sent out by the Interstate Commerce Commission; one proposing a modification of Rule 23 (b) relating to tell-tale holes in flexible staybolts, the other modifying the rule on footboards of steam switching locomotives to permit a test application of a fabricated metal footboard. The modification to Rule 23 (b), he stated, will be placed in effect unless criticism is obtained, none having been received to date. He called particular attention to the modification of the rule governing footboards as the test application was to be made to only one Erie switching locomotive at Buffalo, N. Y. He requested the Mechanical Division to watch the performance of this test application during the authorized period which expires July 1, 1943.

The last item referred to by Mr. Patterson was the specifications for geared hand brakes. What means, he asked, is being used by the Mechanical Division to insure that these hand brakes meet the specifications? He thought it was important to test the geared hand brakes in order to make sure they complied with the requirements of the A. A. R. specifications.

Remarks by Roy V. Wright

In a brief address, Roy V. Wright, managing editor, *Railway Age,* stressed the seriousness of the task with which railway men will be faced during the coming months. He opened his remarks with a reference to the grim determination evidenced by the various members of the Canadian government in a recent conference with a group of business paper editors from the United States and compared their unquestioning confidence in the outcome with that expressed by L. W. Baldwin in his address.

Mr. Wright emphasized the importance of giving careful attention to the little things concerning which Mr. Baldwin had spoken. He suggested that if each repair yard, each shop, and each enginehouse were to do a little better, the cumulative effect would exert a large influence

on the total transportation result. He suggested that the beating of its own record might well be made a game at each of these points all over the United States. Among the things he stressed particularly were the better utilization of existing equipment and materials and the development of more leadership in directing men.

Mr. Wright concluded his remarks with a strong appeal for stubborn courage in facing the difficult times ahead which, he said, was necessary if we are to win a victory for private enterprise and the American type of democracy.

Report of the General Committee

The General Committee reviewed the work of the Mechanical Division and its actions since the last annual meeting of the Division at Chicago in June, 1940. The membership of the division was reported to include 212 railway systems, full members of the Association of American Railroads, and 179 railways, associate members of the Association of American Railroads. These 391 railroads have appointed 818 representatives in the Mechanical Division. There are also 405 affiliated and 345 life members in the division.

As of December 31, 1940, the committee reported, a total of 443,484 interchange freight cars, or 22.17 per cent, were equipped with AB brakes. Of this total 411,672 were railroad-owned and 31,812 were private-line cars. AB brakes were reported as now being applied to existing cars at an accelerating rate.

The committee also reported that the service of the A. A. R. auto-deck has been entirely satisfactory in extensive tests with a large number of automobiles of various makes which have been followed through to destination.

A Study of Locomotive Utilization

The General Committee announced that the joint committee of the Operating-Transportation and Mechanical Divisions on the Utilization of Locomotives and Conservation of Fuel has undertaken a study of all of the conditions related to this subject, that a working sub-committee has been appointed to conduct the study and that a preliminary questionnaire has been sent to the member lines.

The report reviewed the work of the mechanical engineer and his staff during the past year in which he has carried out a number of research projects assigned by the General Committee and has assisted in the work of the regular standing committees of the division.

Among the projects handled during the past year and being handled at the present time are the following:

Axle tests: material specifications for passenger cars; axles for heavy-duty service; tubular axles.
Trucks for high-speed freight service.
Counterbalance standards for locomotives.
A. A. R. auto deck.
Investigation of helical springs for freight cars.
Refrigerator Cars: effect of light cracks; use of dry ice as a refrigerant; use of portable refrigerator containers.
Wrought steel wheels; thin hub wall; reduced mounting pressures.
Tests for Committee on Loading Rules: tests of high tensile bands and wires; tests of welded band anchors.
Assisted in investigations in connection with concentrated loads.
Assisted in tests and preparation of rules governing loading of motorized and mechanized equipment for the U. S. Army.
Investigation of the characteristics of steel at low temperatures, particularly, couplers.
Cooperation with the Joint Committee on Relation between track and equipment.

Tests of crank pins will be started about July 1, 1941, at the axle testing laboratory, located at Canton, Ohio. The axle fatigue testing machines will be adapted for use in this research program.

Since the first of this year, this office has witnessed the squeeze tests of four new designs of passenger cars built to the A. A. R. Specification for New Passenger Equipment Cars.

Counterbalance tests of locomotives, together with rail stress tests, will be conducted during this summer in cooperation with the Engineering Division. Instruments to be used in these tests have been ordered and it is expected that the tests will be started about July 1, 1941. These tests will be under the general direction of the Joint Committee on Relation between Track and Rolling Stock of the Engineering and Mechanical Divisions and the Committee on Counterbalance Standards of the Mechanical Division and under the direct supervision of the Mechanical Engineer of the Mechanical Division and the Research Engineer of the Engineering Division. These tests will be concluded this summer and report will be available about the first of the year 1942.

Tests of tracking characteristics of various designs of freight car trucks, together with side bearing conditions, will be conducted this year under the general supervision of the Committee on Car Construction.

Report on Lubrication of Cars and Locomotives

The committee held two meetings during the past year. In this report, only such subjects as have been handled by the committee for report to and requiring action by the membership, are covered.

Dust Guards

In the 1939 annual report of the committee, a suggestion for revision of Specification M-903-34; Dust Guards, was included with recommendations that it be circularized among the members of the Association with a request that suggestions or criticisms be submitted for further study by the committee. This was done and the comments received through the secretary's office were considered, along with representative samples of dust guards on the market collected by them for study and test.

Recommendation: By action of the Lubrication Committee, concurred in by the Specifications Committee, proposed revision Specification M-903-41 Dust Guards, is made a part of this Report as Appendix "A," and it is recommended that it be submitted to the Association as a Letter Ballot item.

Interchange Rule No. 66

Mandatory Features Relating to Lubrication—During the year, a number of subjects relating to proposed changes or additions to clauses of Rule No. 66, were referred to and handled by the committee as follows:

(1) *Standard method of packing journal boxes—Present "one-piece" vs. "roll" method.* This subject continued from last year with the intention to carry on road tests under the direction of a Sub-Committee. After very careful consideration by the committee it was concluded that there is little difference in results obtained, providing comparable material is applied and equal care is taken with respect to the packing operation. It was decided that limited service tests would be inconclusive. The committee recommends no change in the present rule which leaves the method employed "optional" by designating that packing should be applied "preferably in one piece" (Par. 10(b)—Body of Packing).

(2) *Hollow back journal wedges—Removal from service when non-defective—Wear limits.* (The report of the sub-committee was appended as Exhibit "B"—EDITOR.) Lubrication Committee advised the Arbitration Committee that the committee "sees no objection to individual car owners wearing out hollow back or corrugated journal bearing wedges under their own cars," inasmuch as the rules already prohibit their application in repairs to foreign cars.

It is recommended: (a) That the rules be so construed, and that wedges be not condemned merely because they are hollow back, unless defective under the provisions of Rule No. 66 (k).

(b) That the second sentence of Paragraph 12 of Section of Rule 66 covering "Journal Boxes—Standard Method of Packing," reading: "The use of hollow back or corrugated back wedges is not permitted," be deleted. This sentence is unnecessary, as Interchange Rule No. 19 covers.

(3) Recommendation to prohibit use of front plug in packing of Journal Boxes. The Car Department Officers' Association, at its 1940 annual meeting, recommended to the A. A. R. Mechanical Division that the use of the front plug in packing journal boxes be prohibited. This recommendation was referred to the Committee on Lubrication of Cars and Locomotives for

handling. After full discussion, it is the consensus of opinion of the committee that the present Rule, which makes the practice optional, is desirable and should be continued.

Passenger Equipment Cars—Rules PC-7 and PC-8

(1) *Responsibility for damage due to failure of roller bearing units under passenger cars.* The Arbitration Committee's recommendation for revision of passenger car Interchange Rules 7 and 8, to provide that the failure of roller bearing units, or combination roller bearing units and friction bearing units, due to defects or over-heating, will be classified as car owner's responsibility, was concurred in by the Committee on Lubrication of Cars and Locomotives.

Lubrication of Railway Roller Bearing Equipment—Lubricants and Practices

At the present time there is a wide variation in the specifications of the numerous oils approved or recommended by the roller bearing manufacturers, and even for use on the same bearings on different railroads. The committee feels that a general specification for oils for roller bearings is desirable and will endeavor to include this in the report for next year.

Special Journal Box Lubricators

This subject has been before the committee for a number of years and was last reported on in the 1939 annual report where specific reference was made to engine truck journal lubricators and a number of special lubricators were described and illustrated. In an endeavor to keep abreast of new developments in this field, correlate the results of service test or experience reported by member roads, and make report from time to time as developments in the field warrant, the subject this year was assigned to a sub-committee. The sub-committee reports:

"One member road has had limited satisfactory experience with a journal lubricator pad not heretofore mentioned in reports of this committee. This is a spring actuated pad (shown in Fig. 1), adaptable for use in existing journal boxes and can be applied or removed without removing the bearing or the wedge. This pad was designed with the idea of reclamation or cleaning for re-use and it is claimed that the coil spring laid in a horizontal direction exerts constant pressure of very low magnitude against the journal.

Diesel Locomotive Crank Case Lubrication—Lubricants and Practices

This subject has also been assigned to a sub-committee for study this year and, through a questionnaire to be sent out to the locomotive voting members, the sub-committee hopes to develop material for a report on this subject next year.

Joint Sub-Committee on Journal Box Lubricating Materials

A joint sub-committee consisting of membership from the Specifications and the Lubrication Committees has handled two matters during the year.

I—Proposed Revision—Specification M-905—New Waste for Journal Box Packing

At the suggestion of the chairman of the Committee on Specifications for Materials, revision of Specification M-905-34 was undertaken by the Joint-Sub-Committee.

Recommendations: By action of the Specifications Committee, concurred in by the Lubrication Committee, proposed a revision of Specification M-905-41; New Waste for Journal Box Packing. [This was made a part of the report and it was recommended that it be submitted to letter ballot.—Editor]

II—Proposed Specifications Covering Lubricants for Air Brake Apparatus

Specifications for triple valve oil, triple valve graphite and brake cylinder lubricant: originated by the Committee on Brakes and Brake Equipment, were referred to the Joint-Sub-Committee through the Specifications Committee.

Recommendations: Action of the Specifications Committee, concurred in by the Lubrication Committee, on the proposed specifications for Lubricants; Air Brake Parts, was as follows:

1. Specification M-912-41; Triple Valve Oil, approved with the recommendation that it be submitted to letter ballot.
2. Specification M-913-41; Triple Valve Graphite, approved with the recommendation that it be submitted to letter ballot.
3. Specification M-914; Brake Cylinder Lubricant: A draft of the proposed specification submitted by the Joint Sub-Committee was referred back to the Joint-Sub Committee for further study and report.

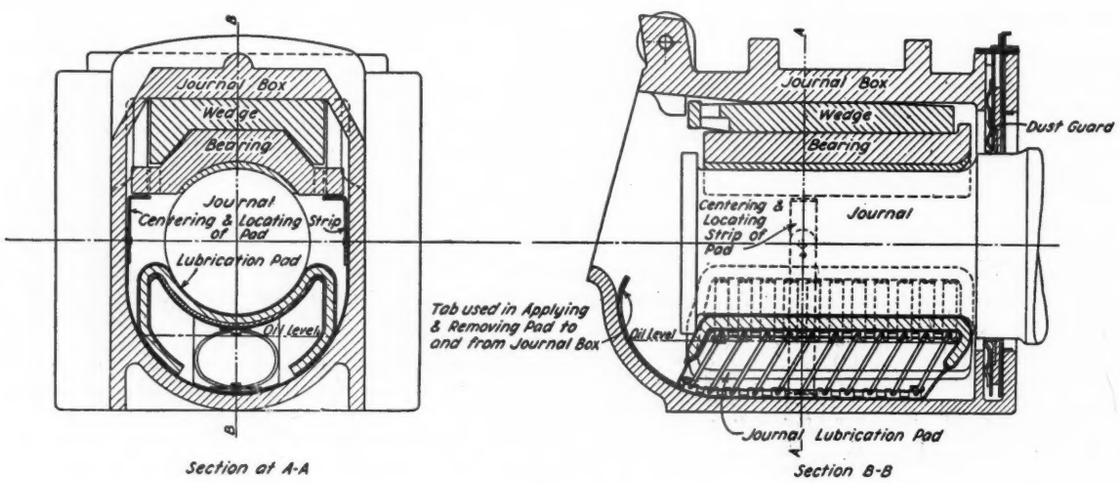


Fig. 1—Lubricating Pad For Use In Existing Journal Boxes

Joint Sub-Committee on Journal Boxes and Contained Parts

A joint sub-committee consisting of membership from the Car Construction and the Lubrication Committees, has made some study of several details in connection with modification of parts of the journal box assembly: box, wedge, and bearing. Consideration of a number of the changes relating to the question of lubrication has been given by the Lubrication Committee or by its representatives on the joint sub-committee. In all cases, however, the proposed modifications involve dimensional changes and design of parts which come under the jurisdiction

of the Car Construction Committee and will be handled in detail by that committee.

The report was signed by J. R. Jackson (chairman), engineer of tests, Mo. Pac.; P. Maddox, superintendent car department, C. & O.; A. J. Pichetto, general air brake engineer, I. C.; L. B. Jones, engineer of tests, Pennsylvania; W. G. Aten, mechanical inspector in charge of lubricating matters, C. B. & Q.; J. Mattise, general air brake instructor, C. & N. W., and J. W. Hergenhan, assistant engineer, test department, N. Y. C.

Discussion

A member referred to the loss of car hours and car days per month caused by hot boxes and stressed the fact that a hot box on one particular car caused delay to every car in the train. He reported the use on his railroad of a journal bearing and wedge of special design which had eliminated the failures caused by wedges sliding out of place.

The next speaker referred to hollow-back wedges which had been eliminated on his railroad and wished to know whether the ribs in these wedges wore cavities in the underside of the box, as the committee had not reported on this particular condition. He also asked if the committee had made any study of the use of flame hardening of wedges as this part was wearing out too rapidly in passenger service. Lastly, he wanted to be advised on the methods used by the railroads in reclaiming solid-back wedges.

Chairman Jackson, in reply, stated that it is true that some wearing of the box might occur from the rubbing action of the ribs of hollow-back wedges. However, as many of these wedges now in service were applied under the United States Railroad Administration, he felt that objections would have been made before now if this trouble was serious. In answering the second question Mr. Jackson said he had no knowledge of the flame hardening of wedges. Referring to the reclamation of solid-back wedges, he advised that this practice is followed but results in trouble if proper care is not used.

H. W. Coddington, research and test engineer, Norfolk & Western, discussed the investigations made by his railroad on the bonding between the brass and the lining of bearings which had resulted in the development of a flux that doubled the bonding strength. This road has included bonding strength in their bearing specifications and the speaker felt that this work had been partially responsible for the reduction in the number of hot boxes.

Chairman Jackson was asked if the plug was eliminated from the new dust guard specifications by intention or by oversight. He replied that it was not eliminated intentionally but Rule 66 covered this point.

The method used to check the alignment of passenger-car trucks at the Sedalia, Mo., shops of the Missouri Pacific was described by G. T. Callender, shop superintendent. This method has resulted in an improvement in truck performance in service.

C. D. Stewart, chief engineer, Westinghouse Air Brake Company, in speaking of the proposed specifications for brake-cylinder lubricant asked why a specification was necessary as his company had developed a very satisfactory method for lubrication to insure a three-year period without servicing. He felt that this method should be retained in order that the three-year period might be repeated. In reply, Chairman Jackson stated that the committee was very glad to have Mr. Stewart's opinion and further study will be made of the proposed specification.

The report was accepted.

Report on Loading Rules

The annual report of the Committee on Loading Rules for the year 1941 is more condensed than in the past for the reason that it is no longer necessary to submit the recommendations of the committee to letter ballot, this permitting the publishing of supplements to the loading rules in advance of the annual meeting. This is a distinct advantage to both railroads and shippers.

The numerous changes and additions made in the last year were necessitated by the rapid changes being made in the shipper's methods of loading, increased speed in train handling and the growing need for new figures covering commodities not previously contained in the rules. All of the approved methods contained in both Supplements Nos. 1 and 2 to the current rules were adopted only after being followed as experimental loads and their value determined.

During the past year, meetings were held with the steel fabrication shippers, creosote pole shippers, rail shippers, farm equipment shippers, cast iron pipe shippers, wrought iron pipe shippers, as well as our annual meeting with representatives of the steel industry. In all, a total of 43 such meetings were held during the year.

Included in this report, as Appendix A, was a summary of the disarranged load reports received from carriers during the six months period ended December 31, 1940. While the summary indicates an increased number of reports received over the first six months of 1940, there are still a number of carriers who are not reporting failures, and a still greater number who are only reporting a small percentage of them. A report similar to that which is shown on Page 2 of Supplement No. 1 of the Loading Rules should be prepared for every open top load which requires adjustment enroute. The summary showing the loads which were disarranged either in "Train Handling," "Yard Switching" or "When received in Interchange," clearly indicates the need for closer inspection on the part of the mechanical department at originating points and enroute, as well as more care on the part of the transportation department in the handling in trains and in the yards.

In connection with the National Defense Program, the committee was instructed last November, to formulate a code of rules for the loading of mechanized and motorized units and major calibre guns for the United States Army and Navy. This necessitated a number of conferences by designated members of the committee with army officers at posts in the Mid-West, South and in the East. It was necessary to secure information and measurements to enable them to prepare specifications and drawings to cover the various units to be loaded on open top equipment. A special supplement containing a set of general rules, specifications and 23 drawings has since been submitted to the War Department at Washington, approved, published and distributed to all army posts and to the carriers. Having in mind that loading methods which would require the use of special tools, a number of various sizes of lumber, bolts, rods, etc., would not be desirable when loading for combat movement, the committee standardized on blocking insofar as possible, eliminating the necessity for using rods, bolts, etc., and prepared the rules in such a manner that only tools common to all army posts are required for loading. A train of army equipment was blocked in accordance with the proposed methods at Fort Knox, Kentucky, and subjected to unusual handling conditions without any disarrangement of lading or securement. The units forwarded from Fort Knox to Washington for the inaugural parade were loaded in a like manner and no trouble was experienced in either direction.

[The details of changes in General Rules Nos. 4, 5, 9, 15, 16, 18 and 21 which were not included in the last annual report but are now effective, having been published in Supplements Nos. 1 and 2 were included in the report.—EDITOR]

Supplement No. 1 contained the following revisions of specifications and figures, either as a whole or in part, but were not included in the last annual report.

22 28 35 51 51-A 80 80-A 81 82 83
83-A 84 85 158 172 172-A 179 199 200 209-A

New specifications and figures, as follows:

6-A 27-B 27-C 108-A 156-A 177

Supplement No. 2 contained the following revisions of specifications and figures, either whole or in part, but are not included in this year's annual report.

27 27-A 27-B 27-C 31 32 35 37 38 40-A
40-B 48 56-A 69 71-A 76 77 78 79 82
84-A 108-A 172 172-A

New specifications and figures, as follows:

35-A 72 79-A 95 95-A 172-B 178 212 213 214 215

The report was signed by W. B. Moir (chairman), chief car inspector, Pennsylvania; C. J. Nelson (vice-chairman), superintendent interchange, Chicago Car Interchange Bureau; R. H. Dyer, general car inspector, N. & W.; H. S. Keppelman, superintendent car department, Reading; T. W. Carr, superintendent rolling stock, P. & L. E.; A. H. Keys, district master car builder,

B. & O.; H. H. Golden, supervisor, A. A. R. Interchange and Accounting, L. & N.; H. T. DeVore, chief interchange inspector, Youngstown Car Inspection Association; H. J. Oliver, general car inspector, D. T. & I., and F. G. Moody, master car builder, Nor. Pac.

Discussion

A member, referring to the general rule in the special supplement containing rules governing the loading of mechanized and motorized army equipment which stated that cars loaded in accordance with these specifications must not be handled in hump switching, thought that this particular rule penalized the railroad. Chairman Moir stated this rule was included as a precautionary measure only in order to prevent damage to equipment such as artillery caused by the impact of cars coupling at a speed of eight to ten miles an hour.

The report was accepted.

Report on Tank Cars

During the past year the committee considered a total of 421 dockets and applications for approval of designs as follows: 278 applications covered designs, materials and construction of 5,617 new shipping containers, for mounting on new cars or for replacement on existing cars.

Six applications covered 12 multiple-unit cars to be used for the transportation of 15 Class I. C. C.-106-A-500 one-ton containers. One application covered one new car structure on which would be mounted a reconditioned tank. One hundred and one applications covered alterations in, additions to or conversions and reconditioning of 1,147 existing tank cars or shipping containers.

Thirty-four applications requested approval of tank-car appurtenance designs, without reference to specific cars.

I. C. C. Specifications for Welded Tank-Car Tanks

Recommendations, previously made to the Interstate Commerce Commission, covering a general revision of the commission's specifications for riveted and forge-welded tank-car tanks to be mounted on or to form part of a car were considered at public hearing held in Washington, D. C., on August 8, 1940. By Order, dated August 16, 1940, the commission made effective January 7, 1941, revised specifications as recommended by your committee.

At public hearings before the Interstate Commerce Commission, during September, 1934, your committee recommended the adoption of specifications, then presented, for tank-car tanks fabricated by means of fusion welding. Recommendation was also made that authority be granted for the use of such tanks, for the transportation of articles classed as dangerous.

To obtain experience with respect to the suitability of tank-car tanks fabricated by means of fusion-welding for the transportation of dangerous articles, the commission, following the September, 1934, hearings and to satisfy specific requests, authorized a total of 1,085 such tanks for use in experimental service trials. The commission's several authorities required owners or operators of any tanks so built and placed in service to render periodic reports covering their condition as determined by inspection.

At the August 8, 1940, hearings, your committee reiterated its 1934 recommendation and supplemented this by report that, of the 1,085 tanks authorized, 491 had been constructed and placed in service. Further, these latter, during 18,047 trips, had traversed a total of 15,292,789 miles without failure of any fusion-welded seam.

With this experience record to sustain it, the commission, by its Order of August 16, 1940, incorporates in its revised regulations, effective January 7, 1941, specifications, as recommended by your committee, for fusion-welded tank-car tanks. Authority is also granted for the use of these in substitution for comparable riveted or forge-welded tanks in the transportation of dangerous articles.

A. A. R. Specifications for Tank Cars

Revision of Interstate Commerce Commission specifications for tanks to be mounted on or to form part of a car, as outlined in the foregoing, has necessitated a general revision of the A. A. R. specifications for tank cars. Distribution of copies of these revised specifications will shortly be made to all interested parties.

As indicated by your committee's last previous report, Appendix A to United States Safety Appliances hand book, last revised during 1920, lacks requirements for appliances now installed on tank cars to meet demands of shippers and their customers. To overcome this deficiency a proposed Appendix B is being formulated. While all items of the latter have not been disposed of, your committee reports progress.

The report was signed by F. Zeleny (chairman), engineer of tests, C. B. & Q.; W. C. Lindner (vice-chairman), chief car inspector, Pennsylvania; G. S. Goodwin, mechanical engineer, C. R. I. & P.; A. G. Trumbull, chief mechanical engineer, C. & O.; B. M. Brown, assistant general superintendent motive power, Sou. Pac.; R. D. Bryan, engineer car construction, A. T. & S. F.; G. A. Young, professor of mechanical engineering, Purdue University; A. E. Smith, vice-president, Union Tank Car Company; W. C. Steffa, transportation manager, Sinclair Refining Company; R. T. Baldwin, secretary, The Chlorine Institute, Inc.; H. J. Gronemeyer, supervisor car equipment, E. I. du Pont de Nemours & Company, Inc.; and R. W. Thomas, manager, special products department, Phillips Petroleum Company.

The report was accepted.

Report on Car Construction

Designs of Standard Cars

Lightweight Steel-Sheathed Box-Car Designs

Last year a program was outlined for the development of lightweight box-car designs in cooperation with the Freight Car Design Committee of the American Railway Car Institute. Tentative designs for four types of construction referred to were submitted for study and analysis. The committee did not submit recommended light weight box car designs at this time. It is proposed to progress this matter with the A. R. C. I. as conditions permit.

Lightweight Hopper Cars

The situation with respect to the development of designs for lightweight hopper cars of 50 tons and 70 tons nominal capacity, in cooperation with the A. R. C. I., is the same as for the lightweight box-car designs. No change has been made in the development program as outlined under Welded Hopper Cars in the annual report for 1940.

50 ft. 6 in. Steel-Sheathed Box and Automobile Box Cars

Arrangements were made during the last regular meeting of the committee, held in March of this year, for the preparation, in cooperation with the A. R. C. I., of designs for steel-sheathed box and automobile box cars of carbon-steel riveted construction having the following clear inside dimensions:

Length between end linings	50 ft. 6 in.
Width between side linings	9 ft. 2 in.
Height at eaves	10 ft. 6 in.

Provision will be made in the base design of the box car for single side doors of clear opening width to meet traffic requirements as will be developed through the Traffic and Operating-Transportation Divisions. In the base design of the automobile box car double side doors having staggered openings 15 feet clear width will be incorporated.

For both the box- and automobile box-car designs, alternate applications of double end doors in one end of the car will be developed.

Overall dimensions for both types of cars will be made to come within the maximum operating clearance outline, Exhibit N dated March 28, 1940, as tentatively agreed upon and now the subject of a separate investigation being made by the Engineering Division. (This was shown as Fig. 1 in the report.)

Included in the report was a detailed tabulation of 55,505 house

type and hopper cars ordered during the above period. An analysis of the figures indicates that the roads have followed A. A. R. design recommendations to the extent shown in the following summary:

Design	No. of cars	Per cent of total
A. A. R. throughout or conforming thereto including lightweight alloy steel to A. A. R. base dimensions, floating center sills, and inside dimensions to meet specific conditions	49,870	89.85
A. A. R. except 26¾ in. center-plate height	2,000	3.60
Not A. A. R. except center sills and 25¾ in. truck height	550	.99
Not A. A. R. design except 25¾ in. truck height	3,000	5.41
Not A. A. R. design	85	.15
Total	55,505	100.00

Another tabulation showed that of the total of 85,794 cars listed 73,825 or 86.05 per cent have standard 25¾-in. center-plate height, 11,110 or 12.95 per cent have 26¾-in. center-plate height, 360 or .42 per cent have 26-in. center-plate height, 300 or .34 per cent have 26⅛-in. center-plate height, 190 or .22 per cent have 27⅝-in. center-plate height, 5 or .01 per cent have 23¼-in. center-plate height, 2 or .005 per cent have 24¾-in. center-plate height, and 2 or .005 per cent have 27-in. center-plate height.

Standard Hopper Cars

As a result of additional experience in the construction and operation of A. A. R. standard 50- and 70-ton self-clearing hopper cars, certain further changes have been made in details of design such as sill steps, body center plate, bolster center fillers, and cubic capacity. The drawings have been revised to cover the various features referred to.

Draft-Gear Key and Retainer Key Slot in Center Sills

Plate 214 in the Supplement to the Manual shows a draft-gear key of one length. Inasmuch as it is the general practice to use keys of different lengths for vertical yoke and horizontal yoke, and the width of the slot in the center sill varies, depending upon which type of attachment is used, a new drawing has been prepared to show a standard draft key and retainer with dimension from underside of head to center of retainer hole and width of slot required in center sills as follows:

	Vertical yoke	Horizontal yoke
Under head to center of retainer hole	16½ in.	18¾ in.
Width of slot in center sills	1¾ in.	2½ in.

The depth of the head on the draft key has been increased from 2½ in. to 3 in.

Design Dimensions for Separable Pedestal Type Journal Boxes "E," "F" and "G"

In view of the increasing use of larger size axles on heavy freight equipment, as well as locomotive tenders, drawings have been prepared to show design dimensions for pedestal-type journal boxes for use with 6 by 11-in., 6½ by 12-in. and 7 by 14-in. journal axles. These designs are based on boxes of this type furnished by various manufacturers and include recess in top of box for leaf spring band which represents the construction most commonly in use.

It is recommended that these drawings be submitted to letter ballot, and, if approved, arrangements will be made to include them in the next revision of the A. A. R. Manual of Standards and Recommended Practice.

Record of Revisions in Drawings and Specifications in Supplement to Manual

In connection with action at the Car Construction Committee meeting of March, 1940:

Sheets showing record of all revisions to date for the 500, 600 and 1500 Series Drawings as well as the box-, hopper-, and refrigerator-car specifications have been prepared. These sheets were included as a part of the report.

Originals will be kept currently up-to-date and will be retained in the office of the Secretary, where they will be available as a matter of information and record.

Bolster Center Fillers and Strikers for 40- and 50-Ton Steel-Sheathed Box Cars and 50- and 70-Ton Hopper Cars

The present designs of cast steel strikers and bolster center fillers have been widely produced and used since 1932.

The many thousands of cars which have been built, embodying these present designs, amply prove how adequately and efficiently these designs of 1932 have served their purpose.

Since 1932 certain refinements and developments have made possible reduction in weights and production costs. During the same period the art of fabrication by welding has been considerably developed, and is now more generally used in car construction.

The Manufacturers' Committee on cast-steel strikers and bolster center fillers submitted to the Car Construction Commitee a report and detail designs covering the following types of strikers and bolster center fillers in Grade B steel: (a) Reduced-weight riveted designs; (b) Reduced-weight designs for manually welding to sills; (c) Reduced-weight designs of bolster center fillers for automatically welding to the sills.

The striker details are the same on both hopper and box cars.

The proposed reduced-weight designs for welding to the sills were approved by the committee, but the details are not recommended to be shown in the Manual; however, details of these will be available and may be obtained through the office of the Secretary of the A. A. R. Suitable references to the above to be made on Plates D and D-1.

In view of the development of the art of die-pressing bolster center fillers to suitable tolerances instead of machining, it is recommended that die pressed center fillers be made a permissible alternate.

Trucks for High-Speed Freight Service

Since last fall the American Steel Foundries have been conducting tests with existing freight-car trucks to see what can be accomplished to improve these trucks in freight service, but to date nothing has been released that would be of interest.

Standardization of Axles Equipped with Roller Bearings

The A. A. R. Committee on Axle Research has now developed axles for 5½ in. by 10 in. and 6 in. by 11 in. journals, based on the new design of passenger-car axles, that will be suitable for application of Timken, Hyatt, S-K-F, and Fafnir roller bearings. The axle committee is continuing this subject to include axles having 4¼ in. by 8 in., 5 in. by 9 in., and 6½ in. by 12 in. journals. As soon as these designs have been completed it is the intention to prepare a report and issue drawings showing all of the axles that will be suitable for interchangeability of roller bearings manufactured by the four companies referred to.

When these axle designs are completed they will also be satisfactory for tender journals.

The Locomotive Construction Committee is working on the question of standard pedestal widths, but this work has not advanced to a point where any recommendations can be made at this time.

Tubular Car Axle

Under date of October 20, 1939, H. C. Urschel submitted application for approval of a new type of tubular railroad-car axle. This application was considered by the Committee on Axle Research at a meeting held October 16 and 17, 1939, and Mr. Urschel was advised it would be necessary to conduct fatigue tests with full-size specimens of his axles on the A. A. R. fatigue

testing machines located at the plant of the Timken Roller Bearing Company, Canton, Ohio, and the results of these tests submitted to the Axle Committee before any approval for such type of axle could be considered. This advice was transmitted to Mr. Urschel under date of December 11, 1939.

The fatigue tests were conducted during the months from January to August, inclusive, 1940. Charles P. Palmer submitted a summary of the tests and requested that this matter be placed before the proper committee of the Association for consideration of this type of axle for use on equipment in interchange. The application was referred to P. W. Kiefer, chairman, Committee on Car Construction, who directed under date of September 16, 1940, that this request should first be submitted to the Axle Committee for review and recommendation as to what it thought should be done or would be necessary. Accordingly, the request was submitted to the Axle Committee at a meeting held in Canton October 16 and 17, 1940, at which time the following action was taken:

After a thorough discussion of the tubular axles of the Pittsburgh Steel Company the committee instructed the secretary to advise the Committee on Car Construction that the tests of this axle so far conducted have only demonstrated the relative comparison of wheel-seat section of the class of heat-treated material used in this design of axle and it was the opinion of the committee that before approval can be given to the general, or even limited application of this type of axle, data should be submitted of possible service performance of this type of journal when either overheated as a whole or locally at various temperatures equal to that of molten brass. It was the further feeling of the committee that this information relative to the journal should be esablished on both journal of nominal and minimum dimensions.

This action was referred to the Committee on Car Construction and was considered by that committee at a meeting held in Chicago on October 24 and 25, 1940. It was the consensus of opinion of the Committee on Car Construction that this matter should be left in the hands of Mr. Cantley and the Axle Committee for thorough investigation before it could be considered for interchange service. Among other things this would include the questions referred to in the action taken by the Committee on Axle Reaserch at its meeting of October 16 and 17, 1940, quoted above.

It was also the consensus of opinion of the Committee on Car Construction that efforts such as this should be encouraged as being along the lines of advancing the state of the art both from the standpoint of material and design, and in the interest of better performance, and that Mr. Cantley and his committee should cooperate fully in the development of such further tests as should be made to demonstrate the suitability of this axle for general interchange service.

The Urschel Engineering Company conducted the tests required by the Axle Committee and furnished their findings in two reports. These two reports were considered at a meeting of the Axle Committee held in Chicago on December 19, 1940.

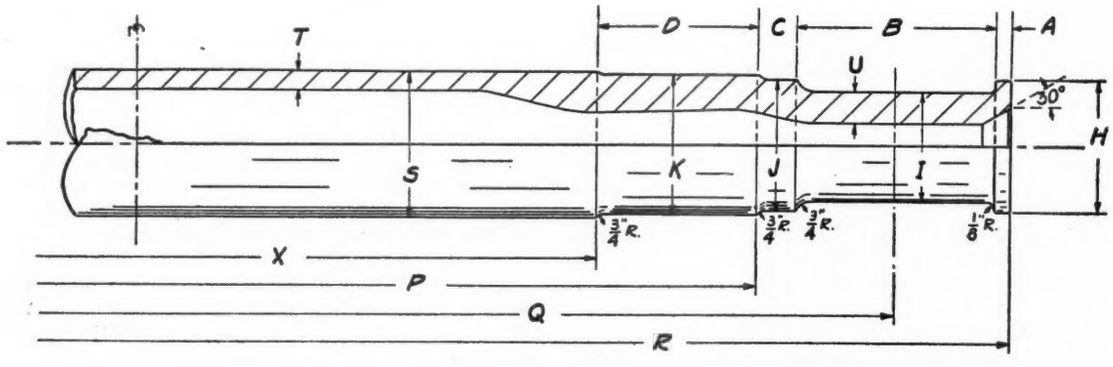
After reviewing all the data on laboratory tests on their tubular axle and also information obtained from tests conducted at Canton, the committee was of the opinion that this type of tubular axle, as made by the process set forth by the Pittsburgh Steel Company, had merit. However, the committee felt that additional laboratory tests should be made on the journal portion of the axles to determine the relative sensitivity to injury due to local overheating of the tubular axle as compared with the solid axle.

The committee also specified that the workmanship of the axle should be entirely smooth, both exterior and interior, and entirely devoid of any tool marks, die marks, or other imperfections that might cause failure of the axle; also that it is very important that the axle be concentric and that care must be exercised to insure such concentricity throughout the axle with uniform wall thickness at the journal, wheel seat, and center portion of the axle.

A meeting of the Axle Committee was held on January 23, 1941, at which time further consideration was given to the additional tests of the tubular axle. After considerable discussion it was decided that additional tests should be made on the journal portion of the axles. To assist the Pittsburgh Steel Company it was agreed that the Chairman, Mr. Sedwick, and Mr. Johnsen should help them to set up a program to determine the relative sensitivity of injury due to local overheating of the tubular axle compared with solid axles. On January 7, 1941, the Chairman, Mr. Sedwick and Mr. Johnsen met with Mr. Urschel and explained to him what they considered should be the method of making these additional tests. They further suggested that he contact the Engineer of Tests of the Pennsylvania Railroad at Altoona to see if their drop test machine could be used for suggested tests. Mr. Urschel visited Altoona and found that the Pennsylvania Railroad had a machine that would be satisfactory for this purpose. In discussing this subject again at the meeting with the A. A. R. representatives at Canton it was agreed by the committee that in making the drop tests the local heating effect should be established according to the method demonstrated by Mr. Urschel wherein the distance from the surface of the axle to the outlet of a No. 12 tip is to be ⅜ in., and heat to be applied 2 in. out from the dust-guard seat of the journal and the time of heating two minutes. The temperature of the surface to be read as a matter of record during the time the torch is applied to the journal with 50 lb. air pressure and 5 lb. gas pressure.

For comparative purposes two axles to Specifications M-101, Design 6, were furnished for test by the A. A. R., the journals to be machined to 5¼ in. diameter and the wheel seats to be machined to 7 9/16 in. diameter. After this machining had been done the axles were shipped to H. C. Urschel, Pittsburgh Steel Company, Allenport, Pennsylvania.

The drop tests were started on February 11 and completed on



Class of axle	Size of journal, in.	Dimensions														
		A	B	C	D	H	I	J	K	P	Q	R	S	T	U	X
		in.	in.	in.	in.	in.	in.	in.	in.	ft.-in.	ft.-in.	ft.-in.	in.	in.	in.	ft.-in.
B	4¼ x 8	5/8	8	2	8 1/16	5¼	4¼	5¼	5¾	5-3	6-3	7-0¼	6	¾	1 1/16	3-10⅞
C	5 x 9	¾	9	2	8 1/16	6⅛	5	6⅛	6½	5-3	6-4	7-2½	6¾	⅞	1½	3-10⅞
D	5½ x 10	¾	10	2	8 1/16	6⅝	5½	6⅝	7	5-3	6-5	7-4½	7¼	1	1½	3-10⅞
E	6 x 11	⅞	11	2¼	8⅝	7¼	6	7¼	7⅝	5-2½	6-6	7-6¾	7⅞	1	1..	3- 9¼
F	6½ x 12	⅞	12	2¼	8⅝	7¾	6½	7¾	8⅛	5-2½	6-7	7-8¾	8⅜	1 1/16	1⅝	3- 9¼

Dimensions of Urschel-Pittsburgh Tubular Car Axle

February 13, 1941. Prior to witnessing the drop tests at Altoona, the committee visited the plants of the Pittsburgh Steel Company at Monessen and Allenport, Pa., where they inspected the methods used in forging the tubular axles. After the drop tests were completed a report was prepared and the results of the tests were considered at a meeting of the Axle Committee held in Chicago on March 6. In addition to discussing the report on drop tests, the two former reports were also reviewed and again thoroughly considered. The Axle Committee finds that the Urschel Engineering Company, which is handling this matter for the Pittsburgh Steel Company, has complied with all requests the Axle Committee made for tests. The cost of all these tests has been assumed by the Urschel Engineering Company and the Pittsburgh Steel Company and consequently there has been no expense to the Association in conducting these tests.

Conclusions

(1) Possible service performance of this type of journal when either overheated as a whole, or locally, at various temperatures equal to that of molten brass. Tests indicated that the heating of the journal of the tubular axle did not affect the functional strength of the axle in any way because the journal portion is much heavier in proportion to the load it must carry than that part of the axle where the maximum stresses occur, namely, the inside of the wheel seat.

(2) Deflection of journals—A. A. R. Design No. 6 axle and tubular type axle. In the drop tests the journals of both types of axle were subjected to the same type drop tests; that is, starting at one foot with a 2,000-lb. tup, and increasing the height by increments of 6. in. up to 6 ft.

Permanent set with the center of the axles clamped rigid. The total set of the solid axle was 1.4 in., 1.34 in., and 1.39 in.; of the tubular axle, 0.68 in.

Tests made with axle center free to flex. Solid axle, 0.74 in.; tubular axle, 0.48 in.

Permanent set at the center of the solid axle was 0.34 in. and of the tubular axle 0.03 in.

One end of two of the tubular axles broke off, one at a drop of 5 ft. 6 in., and the other at 6 ft., but both of these axles were clamped rigid in the center and it was felt that this was a contributing cause as an inspection of the metal after failure did not indicate any poor structure.

(3) All of the tubular axles tested were designed to maintain the old wheel fit diameter of 7 in. which is the standard nominal diameter for 5½ by 10-in. journals, whereas the solid axles recently redesigned by the Axle Committee require 7 9/16-in. diameter wheel fit. The design of the tubular axle is such that it does not require the same diameter of wheel fit that is required by the redesigned solid axle.

(4) The tubular axles we tested might be considered as handmade axles and did not include all the refinements that could have been obtained if they had been made with proper forging equipment. With the proper forging equipment for manufacturing this type of axle there will be an entirely smooth finish both on the exterior and interior of the axle and uniform sections throughout. The smoothness of the finish will be comparable to the tubing that is now being made by the same forging process the axles are to be made of and upon inspection we found this to be a smoother finish than could be obtained by turning.

(5) While all tests of the tubular axle were conducted with axles having journals of 5½ in. by 10 in. so as to be comparable with the A. A. R. tests of solid axles, a drawing dated March 20, 1941, showing the design of Urschel-Pittsburgh tubular Railway Axles for journals 4¼ by 8 in. up to and including 6½ by 12 in., is included.

Advantages of the Tubular Axle as Compared with the New Design Solid Axle

(1) The tests conducted with the Urschel-Pittsburgh tubular railway axle at Canton indicate that the wheel seat and body construction has more than a 25 per cent increase in fatigue strength compared with the new A. A. R. Design No. 6 axle for 5½ in. by 10 in. journal; and the new A. A. R. Design No. 6 axle has from 60 to 80 per cent greater allowable design fatigue strength than the present 5½ in. by 10 in. journal A. A. R. axle with the "black collar."

(2) Increased loading capacity with increased factor of safety.

(3) Interchangeability with the A. A. R. standard solid axles.

(4) Material decrease in weight. As an example, the 5½ in. by 10 in. journal tubular axle weighs approximately 275 lb. less per axle than the solid axle with the same size journal. The proportionate reduction for tubular axles having journals larger than 5½ in. by 10 in. will be greater.

(5) The committee has no information on the relative costs of the tubular axle as compared with the solid axle, but in making such a comparison it should be with the new design A. A. R. passenger car axles which require that the body of the axle be smooth-machined between wheel seats.

(6) The tubular axles are heat treated by a special heat treating process and it was found from actual tests that by this method of heat treating the wear of the journal between collars increases less rapidly than with the untreated solid axles.

In view of the above investigation by the A. A. R. Committee on Axle Research, the committee recommends that the Urschel-Pittsburgh tubular railway axle be approved for general interchange service. In giving this approval, however, it is to be understood that it is for this make of axle only and should any other manufacturers of axles ask for approval of hollow or tubular axles, such axles will be required to go through the same series of tests that were required of the Urschel-Pittsburgh Tubular Railway Axle.

The above report with conclusions and recommendations was considered by the Committee on Car Construction at a meeting held in Chicago on March 13 and 14, 1941, and after discussing the entire report of the Axle Committee in detail the Committee on Car Construction recommended that the Urschel-Pittsburgh tubular railway axle be submitted to letter ballot to be adopted as an alternate interchange standard for all purposes.

Report on Side Frames and Bolsters

During the past year numerous new designs of side frames and bolsters were submitted for approval. Seventeen new designs of side frames and eight new bolster designs have been approved, while eleven side frame designs and eight bolsters have applications pending.

The report also included a complete tabulation of side frames and bolsters approved to date and a similar tabulation of designs on which applications are pending.

New Designs of Freight Cars

Since the last annual report the following designs of freight cars have been reviewed in accordance with the first paragraph of Interchange Rule 3 and approved for interchange service:

Name of Company	No. of Designs	Purpose
American Car and Foundry Company	2	Car structure for transporting chlorine containers
	1	Reinforced underframe for chlorine container car built in 1930
General American Transportation Corporation	1	All-welded design of tank car underframe
	1	Car structure for transporting chlorine containers
Pennsylvania R. R.	1	New design; depressed high-capacity flat cars
	1	70-ton low-side gondola
	1	52 ft. 6 in. gondola
	1	New design high-capacity flat car

Report of Sub-Committee on Definitions and Designating Letters

Since the last annual report the sub-committee has passed upon the following which have been approved by the members through letter ballot:

Substitute following for present definition for "LF" cars:

"LF"—A flat car equipped with one or more demountable con-

tainers for the transportation of liquids or other commodities, not under refrigeration.

Reason—The old definition is in conflict with the new definition for "RC" cars.

Adopt a new designation and definition for "RC" cars as follows:

"RC"—A car equipped with one or more demountable insulated containers. The containers may be equipped with facilities for refrigeration.

Reason—To provide for a new type of car.

Adopt a new designation and definition for "LFA" cars as follows:

"LFA"—A flat car equipped with a container or containers for transporting commodities immersed in liquids or gases.

Reason—To provide for a new type of car.

The committee has also passed favorably upon the following and recommended that it be submitted to letter ballot:

Substitute the following for the present definition for "FG" cars:

"FG"—Flat or gun truck car for special transportation of heavy ordnance or other heavy commodities.

The report was signed by P. W. Kiefer (chairman), chief engineer motive power and rolling stock, N. Y. C.; T. P. Irving (vice-chairman), engineer car construction, C. & O.; W. A. Newman, chief mechanical engineer, Can. Pac.; J. McMullen, superintendent car department, Erie; R. D. Bryan, engineer car construction, A. T. & S. F.; G. S. Goodwin, mechanical engineer, C. R. I. & P.; H. L. Holland, assistant engineer, B. & O.; L. R. Schuster, engineer car construction, Sou. Pac.; J. T. Soderberg, general foreman, Pennsylvania; T. M. Cannon, engineer car construction C. M. St. P. & P.; and F. J. Jumper, general mechanical engineer, Union Pacific.

Discussion

K. F. Nystrom, mechanical assistant to chief operating officer, Chicago, Milwaukee, St. Paul & Pacific, suggested that a special committee be appointed during the present emergency in order that immediate action might be obtained on developments in car construction. He also recommended to the Association the adoption of a standard design for roller-bearing axles and boxes as well as car wheels. He felt that one standard axle for roller bearings, somewhere between the 5½-in. by 10-in. and 6-in. by 11-in. sizes would meet the requirements of the railroads.

Another member thought that the tubular axle should be given special consideration at this time not only because it would save steel but it would also reduce the dead weight hauled in trains. In speaking of the tubular axle, one member wished to know what part of the increased strength obtained in this axle was due to design and how much was the result of heat treatment. In reply, W. I. Cantley, mechanical engineer, Association of American Railroads, expressed the opinion that all factors had contributed to the greater strength of the tubular axle.

H. H. Lanning, mechanical engineer, Atchison, Topeka & Santa Fe, stated that his road had 400 axles of the 7-in. by 13-in. size and no provision had been made for this size of axle in the report. Mr. Cantley replied that designs for both the 7-in. by 13-in. and the 7½-in. by 14-in. separable pedestal-type journal boxes had been prepared but had not yet been submitted. A member of the committee made the statement that the 7-in. by 13-in. journal box will be included in the recommendation.

The report was accepted and the recommendations submitted to letter ballot.

Report of Arbitration Committee

During the year Cases 1779 to 1785, inclusive, have been decided and copies forwarded to the members. A copy of these decisions is made part of this report. A vote of concurrence in the decisions is respectfully requested by the committee.

Upon recommendation by the Committee on Brakes and Brake Equipment, a new requirement under Rule 3 is recommended for submission to letter ballot, to make mandatory the use of Standard extra heavy air brake pipe on all cars built new or rebuilt on or after January 1, 1942, account difficulties being experienced due to failure and leakage of light weight pipe.

With the concurrence of the Committee on Car Construction and Committee on Couplers and Draft Gears, it is recommended that the effective date of Rule 3 requirement prohibiting acceptance from owners of cars equipped with 5-in. by 5-in. couplers, be extended to January 1, 1943, with proviso it is contemplated no further extension beyond this date will be granted.

The modification of Rule 12 is recommended, to provide that joint evidence to be valid must be obtained within two years after date of repairs. It is felt that if original repairs have given satisfactory service for a two-year period, there is no justifiable reason for making correction at expense of initial repairing line.

Upon recommendation by the Committee on Couplers and Draft Gears, a new requirement is added to Rule 18 prohibiting the burning out of key slots in couplers and requiring removal of such couplers when found in service at expense of car owner. The item has also been added to Rule 19 as prohibited repairs to foreign cars. It is felt that such couplers constitute a hazard in service.

New requirements are added to Rule 60, upon recommendation by the Committee on Brakes and Brake Equipment, making mandatory the substitution of improved parts and elimination of certain details of the AB brake equipment when brakes receive periodic attention.

Recommendations are offered for modification of Rules 112 and 120 to permit car owners to request the return of serviceable AB brake equipment from his cars when dismantled on foreign lines. Rule 120 is also modified to harmonize with Rule 112 with respect to returnable items.

Revision of Rule 113 is recommended to provide that the car owner will be responsible for damage or destruction of a private car by fire, explosion or other condition beyond control of delivering line, while located on private tracks belonging to or leased to lessee of car, it being considered inequitable to place responsibility upon delivering line in such cases. A second modification is proposed, to protect the car owner in cases where privately owned cars are damaged or destroyed on the tracks of a non-subscriber road to which the car has been delivered without authority of owner or lessee.

A new requirement is added to Passenger Rule 7 to provide that the failure of roller bearing units, or combination roller bearing and friction bearing units, due to defects or overheating, will be a car owner's responsibility. The maintenance of roller bearings is generally performed by car owner and foreign lines have practically no opportunity to protect themselves against such failures. This recommendation is concurred in by the Committee on Lubrication of Cars and Locomotives.

Studies of the overhead allowance now used in formulating the A. A. R. labor rate are being made and, if it develops that modification is necessary as result of these studies, with the approval of the General Committee the revision will be incorporated in the 1942 Code.

With the exception of the Rule 3 requirement above mentioned, the Committee does not feel that any of the modifications included in its report necessitate submission to letter ballot.

All recommendations for changes in the Rules of Interchange submitted by members, railroad clubs, private car owners, etc., have been carefully considered by the committee and, where approved, changes have been recommended.

Attention is again directed to the fact that the Arbitration Committee will not consider questions under the Rules of Interchange unless submitted in the form of Arbitration Cases as per Rule 123.

Freight-Car Rules

Rule 2

The committee recommends that Paragraph (1) of Section (g) of this rule be modified as follows:

Proposed Form: (g) (1) A. A. R. Car Service Rule 14 will apply (see page 276) when transfer or rearrangement of lading is necessary, including application of proper door protection *when car shows evidence from exterior inspection that load has shifted.*

Reason: To clarify the intent.

Rule 3

The committee recommends that effective dates for various

requirements in the present rule, as listed below, now set at January 1, 1942, be extended to January 1, 1943:

Section (b), Paragraph (7)—Brake levers: Metal badge plates.

Section (b), Paragraph (8)—Bottom rod and brake beam safety supports.

Section (b), Paragraph (9)—Braking power.

Section (c), Paragraph (11)—Couplers having 5 by 5 inch shanks.

Note.—The committee does not contemplate granting a further extension in effective date of the requirement prohibiting acceptance from owners of cars equipped with 5 by 5 inch couplers, beyond January 1, 1943. This proviso has the concurrence of the Committee on Car Construction and Committee on Couplers and Draft Gears.

Section (c), Paragraph (12)—Couplers, former Standard (except type D) or Temporary Standard having 5 by 7 inch shanks.

Section (j), Paragraph (2)—Journal boxes, repacking of.

Section (t), Paragraph (3)—Application of welded side frames having "T" or "L" section compression or tension members.

Section (u), Paragraph (4)—Class E-3 cars not to be accepted from owner.

The committee recommends that a new paragraph and note be added to Section (a) of this rule effective January 1, 1942, subject to approval by letter ballot, to read as follows:

Air brake pipe: Extra heavy pipe (except nipples at angle cocks, which should be of standard weight) required on all cars built new or rebuilt on or after January 1, 1942. From owners.

Note.—It is recommended that when brake pipe is renewed on cars built prior to January 1, 1942, extra heavy pipe as above be used.

Reason: To make mandatory the use of standard extra heavy pipe, account difficulties experienced due to failure and leakage of light weight pipe, as recommended by the Committee on Brakes and Brake Equipment.

The committee recommends that fourth paragraph of Section (c) and Interpretation No. 1 of this rule be eliminated.

Reason: No longer necessary on account of obsolete construction.

The committee recommends that third paragraph of Section (d) of this rule be modified and Interpretation No. 5 eliminated, as follows:

Proposed Form: (d-3) Draft key retainer, A. A. R. Standard, or approved equivalent, or A. A. R. Alternate Standard one-inch diameter hair pin type, required *in all horizontal draft keys (one, two or three key attachment), on all cars. However,* draft key retainer with *not less than 5/8 inch thickness of head will be accepted on* cars built prior to March 1, 1929, where the underframe construction will not accommodate the *A. A. R. Standard* one-inch thickness of head. From owners.

Reason: To eliminate Interpretation No. 5.

The committee recommends that note following fourth paragraph of Section (t) of this rule, be modified, effective August 1, 1941, as follows:

Proposed Form: (t-4) No change.

Note.—The movement of cars equipped with arch bar trucks must be confined to owner's rails, except that they are acceptable in interchange from owner for loading or for unloading within the same terminal switching district in which the interchange occurs, and providing that cars so interchanged will be immediately returned to owner's rails when loading or unloading is accomplished.

Cars, *locomotive cranes, tenders and derricks,* equipped with arch bar trucks, are acceptable for movement between plants located in the same switching district.

Reason: To clarify the intent.

Rule 4

The committee recommends that Paragraph (1) of Section (h) of this rule be modified, effective August 1, 1941, as follows:

Proposed Form: (h) (1) Tank cars.—Sheets, heads or domes of non-insulated cars, when bent inwardly in excess of eight inches by eight inches, or equivalent area, or when bent inwardly in excess of ¼ inch in depth regardless of area; however, dents *or cracks* in heads due to former head block anchorage, *or in sheets due to contact with cradle or saddle blocks,* will be owner's responsibility.

Reason: Damage due to such causes should be the responsibility of car owner.

Rule 9

The committee recommends that first requirement opposite "Wheels and axles, R. and R." in this rule, covering information to appear on repair cards, be modified, effective August 1, 1941, as follows:

Proposed Form: Cast-steel; wrought-steel; 1-W wrought-steel; steel-tired; or cast-iron wheels (whether single plate *bracketed, single plate not bracketed,* or double plate, which must be indicated by letters *"S. P. B.," "S. P. N. B.,"* or "D. P.," *respectively,* in service metal column).

Reason: As recommended by the Committee on Wheels, such information being necessary in connection with studies of cast-iron wheel failures.

The committee recommends that requirement for classification number opposite item of "Brake shoes, applied," be eliminated from this rule.

Reason: It is felt this information is no longer necessary on billing repair cards, as the former standard shoe has not been manufactured for several years and is no longer in service. Furthermore, Rule 19 prohibits the application of other than the Standard or Alternate Standard shoes in repairs to foreign cars and Rule 3 prohibits acceptance of cars from owners unless equipped with the A. A. R. Specification shoe.

Rule 12

The committee recommends that second paragraph of this rule be modified and Interpretation No. 1 eliminated, as follows:

Proposed Form: At points where it is impracticable for a railroad company to obtain joint evidence, the evidence of car owner shall *suffice* provided it is *signed only* after *an* actual inspection by *any railroad* representative *designated by the car owner as competent to make such inspection.*

(Vacant.)

Reason: To eliminate the interpretation.

The committee recommends that fifth paragraph of this rule be modified as follows:

Proposed Form: Joint evidence must be obtained within 90 days after first receipt of car home, *but in no case exceeding two years after date of repairs,* and said joint evidence shall not be valid unless used within 16 months from date of issue.

Reason: It is felt that if original repairs have given satisfactory service for a period of two years, there is no justifiable reason for making correction at expense of initial repairing line.

Rule 14

The committee recommends that second paragraph of this rule be modified as follows:

Proposed Form: Facing the B end of car, in their order on the right side of car, wheels, journal boxes and contained parts (*including box lids*), shall be known as R1, R2, R3 and R4, and (etc.—no other change).

Reason: To clarify the intent.

Rule 17

The committee recommends that new last sentence be added to Paragraph (4), Section (c) of this rule, to read as follows:

(c-4) Equipment markings (for couplers, draft gears, etc.) are not required; however, the rules do not prohibit application of such markings by car owner. If car bears previous markings for couplers, in the event of first application of "D" or "E" type coupler; or if A. A. R. approved draft gear is applied in place of non-approved or obsolete type of draft gear, and car bears previous markings for latter gears; such markings must be changed to correspond with coupler or draft gear applied (for the particular end, A or B, or both ends, as the case may be) for which a charge of ½ hour may be made. In event of failure of repairing line to correct markings under such circumstances, defect card shall be issued for ½ hour labor to cover. *In such cases the words "A. A. R. APPVD. DRAFT GEAR" may be used in lieu of specifying the particular name and type of approved draft gear applied.*

Reason: To eliminate necessity of preparing stencils for the many types of draft gears.

The committee recommends that a new Paragraph (6) be

added to Section (c) of this rule (present Paragraph 6 to be relocated as new Paragraph 7), effective August 1, 1941, to read as follows:

(6) When old style bottom rotary lock lift lever or toggle is found defective on an A. A. R. Standard type "E" coupler, repairing line has the option of renewing old style parts in kind or may substitute as correct repair complete new type assembly having the two parts riveted together. In the latter case, full charge may be made and scrap credit allowed for the old style parts removed (see Rule 101 for charges and credits).

Reason: As recommended by the Committee on Couplers and Draft Gears.

The committee recommends that Paragraph (d) of this rule be modified as follows:

Proposed Form: (d) Bolts substituted for rivets, where rivets are the standard of the car, are considered as improper repairs, except where used in securing ladders, ladder treads, handholds, sill steps and uncoupling lever brackets, *on all cars of all types;* also *proper to use bolts* for securing coupler and draft gear supports on tank cars; *except, that in no case shall bolts be substituted for rivets which pass through the shell* or metal jacket of tank *of tank cars.* The substitution of bolts for rivets, or (etc.—no other change).

Reason: To clarify the intent.

The committee recommends that three new sentences be added to Note 2 following Section (e) of this rule, effective August 1, 1941, to read as follows:

Note 2.—The A. A. R. brake beam with strut designed for third point suspension is an optional A. A. R. Standard and must be maintained in repairs where standard to car. Therefore, substitution of beam without provision for third point suspension constitutes wrong repairs subject to defect card for labor and material. *Sliding chair castings must be transferred from beam removed to beam applied. A brake beam with No. 1656 sliding chair may be applied as correct repairs in replacement of beam having optional design of strut and former type No. 1293-B sliding chair. Material charge is permissible only when sliding chair on beam removed is missing or defective, and where beam with chair casting is standard to car.*

Reason: The former type sliding chair is obsolete and has not been manufactured since 1934.

The committee recommends that new explanatory note be added to Section (i) of this rule, effective August 1, 1941, to read as follows:

Note.—The term "interchangeable as to sill spacing and coupler pocket limits" means that gear applied should preferably be of the same height, width and length as the gear removed. In the substitution of gears the length (including the number of followers required for the type of gear applied) must be such as to properly fit the coupler yoke. Gears applied must conform with draft sill construction of car and, if practicable, with existing draft gear supports and guides. Any modification of the sill construction such as cutting or burning of slots for accommodation of transverse spring rods or of holes for accommodation of different design of guides or supports is not permissible.

Reason: To clarify the intent with respect to draft gear substitution. This recommendation has the concurrence of the Committee on Car Construction and Committee on Couplers and Draft Gears.

Rule 18

The committee recommends that Paragraph (1) of Section (a) of this rule be modified as follows:

Proposed Form: (a-1) Couplers, types D and E, with distance between point of knuckle and guard arm exceeding 5 5/16 inches as measured by gage (Fig. A, page 56), must have the defective part or parts renewed to bring coupler within required gage of 5 1/8 inches as measured by gage (Fig. C, page 57). If coupler is out of gage, the body must not be renewed unless the application of secondhand, reconditioned or new *lock, or knuckle, or both,* will not bring it within the required gage of 5 1/8 inches. *Likewise, knuckle must not be renewed unless the application of secondhand, reconditioned or new lock will not bring coupler within the required gage of 5 1/8 inches.*

Reason: To clarify the intent that, where renewal of parts will correct defective condition, renewal of complete coupler is not justified. This recommendation has the concurrence of the Committee on Couplers and Draft Gears.

The committee recommends that a new Paragraph (2) be added to Section (c) of this rule (present Paragraphs (1) and (2)) to be relocated as Paragraphs (1-a) and (1-b), effective August 1, 1941, to read as follows:

(2) Burning out of key slots in any type of coupler body is prohibited. When couplers with burned-out key slots are removed for any reason or, if such couplers are found in service, they must be removed at the expense of car owner.

Reason: Coupler with burned-out key slots constitutes a hazard in service. As recommended by the Committee on Couplers and Draft Gears.

The committee recommends that the caption appearing in Figure D of Rule 18 reading "Condemning limit for cracks *horizontally inclined,*" be modified to read "Condemning limit for cracks *extending in any direction.*"

Reason: To clarify the intent.

The committee recommends the addition of a new Section (d) to this rule, effective August 1, 1941, to read as follows:

(d) Top Lock Lifters—Type D Couplers. Lock lifters, No. 1, or No. 2 which have not been converted to No. 3, may be replaced with lock lifter No. 3 at car owner's expense, whether or not the No. 1 or No. 2 is defective.

Reason: As recommended by the Committee on Couplers and Draft Gears, to prevent couplers from opening in service.

Rule 19

The committee recommends that a new item be added to this rule (which specifies materials that must not be used in making repairs to foreign cars), effective August 1, 1941, to read as follows:

Coupler body having burned-out key slots.

Reason: Coupler with burned-out key slot constitutes a hazard in service. As recommended by the Committee on Couplers and Draft Gears.

The committee recommends the effective date for eleventh item under this rule, now set at January 1, 1942, be extended for one year, to read as follows:

Welded cast-steel truck side frames having "T" or "L" section compression or tension members, on and after January 1, *1943.*

Reason: To harmonize with extension recommended under Rule 3.

The committee recommends the addition of a new item to this rule, effective August 1, 1941, to read as follows:

Lock lifters, top, type D, No. 1 or No. 2 (which have not been converted to No. 3).

Reason: As recommended by the Committee on Couplers and Draft Gears.

Rule 23

The committee recommends that effective date of requirement prohibiting the welding of cast-steel truck side frames having "T" or "L" section compression or tension members, now set at January 1, 1942, be extended to January 1, 1943.

Reason: To harmonize with extension recommended under Rule 3.

The committee recommends that eighth paragraph of Section IV of this rule be modified as follows:

Proposed Form: Couplers: Welding cracks in guard arm and back wall of coupler head in accordance with practice described on pages 479-506 of the 1932 Mechanical Division Proceedings, and including couplers with *cracks extending in any direction but not* beyond the welding limits indicated in Paragraph (c) of Rule 18.

Reason: To harmonize with change in Figure D of Rule 18.

Rule 32

The committee recommends that Section (2) of this rule be modified as follows:

Proposed Form: (2) *Stop* cock, or valve *for similar purpose,* attached to bottom *cap of bottom* outlet valve *nozzle,* if missing, providing car is stenciled "Valve attached to outlet *cap.*"

Reason: to clarify the intent.

The committee recommends that a new last sentence be added to Paragraph (c) of Section (10) of this rule, effective August 1, 1941, to read as follows:

(c) Train collision, Section (d) shall apply in cases of dam-

age due to locomotive, or locomotive with draft of cars, coupling to train or to draft of cars.

Reason: To clarify the intent.

RULE 44

The committee recommends the addition of new Notes D and E following Paragraph (4-c) of this rule and modification of Interpretation No. 1 thereto, effective August 1, 1941, to read as follows:

Note D—When failure of underframe as described in Paragraph (2), (3), or (4) on cars other than tank cars occurs through old or progressive fracture, or due to failure of cast-steel draft extension on car having two center sills; a joint inspection certificate so indicating, signed by a joint inspector or by two inspectors, one of whom must represent a disinterested railroad, shall constitute sufficient evidence that damage occurred in ordinary handling provided, after investigation, it is found that car was not subjected to unfair handling as provided by Paragraph (a), (b), (c), (e), (f), (h), (i), (j), (m), (n), (O-1) and (q) of Section (10) of Rule 32. Whether or not the labor cost of repairs in such cases exceeds the limits of Rule 120, the car shall be reported to car owner and handled under the provisions of that rule.

Note E—When failure of underframe as described in Paragraph (2), (3), or (4) on cars other than tank cars is discovered when car is in train road haul or upon arrival at terminal and prior to switching, the damage will be considered as having occurred in fair usage and, therefore, car owner's responsibility; provided, however, after investigation it is found car was not subjected to unfair handling as described in Paragraphs (a), (b), (c), (d), (e), (f), (h), (i), (j), (m), (n), (o-1), and (q) of Section (10) of Rule 32, that there is no knowledge or record of the defective condition existing prior to car being placed in such train and that there was no switching of one or more cars in train enroute. Whether or not the labor cost of repairs in such cases exceeds the limits of Rule 120, the car shall be reported to car owner and handled under the provisions of that rule.

Interpretation. (1) Q—Is a brief statement that car was not damaged under any condition prescribed in Rule 32 sufficient to establish the responsibility of car owner?

A.—No. Except as provided in last sentence of Note C, and Notes D and E. Statement must show details of the circumstances under which the damage occurred, so that owner may know how responsibility was determined.

Reason: To more equitably allocate responsibility for failure of center sills.

RULE 59

The committee recommends that a new last sentence be added to first paragraph of this rule, to read as follows:

Proposed Form: Rule 59. Missing centrifugal dirt collectors from cars built or rebuilt prior to August 1, 1929, where such cars are stenciled that they are so equipped. *However, such stenciling is not required on any car equipped with AB brakes, regardless of date built.*

Reason: Centrifugal dirt collectors are a standard part of the AB brake installation.

RULE 60

The committee recommends that Paragraph (f) of this rule be modified as follows:

Proposed Form: (f) All old cleaning marks must be scraped off and painted over with quick-drying paint, preferably black. The place, month, day and year of cleaning and the *railroad or private line reporting marks,* must be stenciled with white paint on the auxiliary reservoir, (etc.—no other change).

Reason: To harmonize with changes made in cuts on pages 124 and 125.

The committee recommends that last sentence in Paragraph (g) of this rule, reading as follows, be eliminated:

Effective January 1, 1935, triple valves applied in repairs to all cars must be equipped with the heavier type graduating springs (piece Nos. 18286 or QT 369), regardless of type in valve removed; for which no additional charge is permissible.

Reason: No longer necessary account covered in the A. A. R. Standard Code of Tests.

The committee recommends that new third and fourth notes be added to Section (1) of this rule, and present first and second notes reversed for easier reference, effective August 1, 1941; the new notes to read as follows:

Note 3.—AB brakes receiving periodic attention on and after August 1, 1941, must have improved parts substituted for those of previous designs and piece numbers. Extra charge will be allowed for the improved type strainer, the COT&S allowance being modified to include value of the other items. The improved type parts referred to are as follows:

Quick-action chamber charging choke Pc. No. 506277 or CV-265.
Brake pipe strainer.....Pc. No. 502904 or CV-232.
Emergency piston spring.....Pc. No. 501006 or CV-227.
Reservoir release valve end plate....Pc. No. 94963 or CV-173.
Wasp excluder barrier in the quick-service vent passage.....Pc. No. 515820 or CV-276.

Note 4.—When AB brakes are given periodic attention, the service portion applied must have had two by-pass check valves (Pc. No. 502140 or CV-250), two springs (Pc. No. 93926 or CV-140), one check valve seat (Pc. No. 502902 or CV-255), and one check valve seat gasket (Pc. No. 93928 or CV-134), removed and the port drilled to 39/64 in. diameter and suitably plugged, for which no extra charge is permissible.

Reason: As recommended by the Committee on Brakes and Brake Equipment.

RULE 66

The committee recommends that a new last sentence be added to Section (b) of this rule, to read as follows:

(b) All journal boxes shall be jacked; all journal wedges and bearings removed for examination, and renewed where necessary; all boxes cleaned and repacked with properly prepared packing (new or renovated) in accordance with A. A. R. Standard Practice (except the use of the back roll which is optional with repairing company), and car stenciled. Dust guards shall be renewed, when necessary, only where wheels, journal boxes or unit side frames are removed. *Missing or defective dust guard plugs shall be renewed.*

Reason: In all cases where boxes are repacked, these plugs should be used to exclude dirt and cinders from the journal box.

RULE 74

The committee recommends that a new note be added to this rule, to read as follows:

Note.—Wheels condemned under this rule should be shown on repair records as "Vertical Flange" or "Thin Flange," as the case may be, rather than "Worn Flange."

Reason: It is felt this detail information should be available to the car owner.

RULE 94

The committee recommends that third paragraph of this rule be modified, effective August 1, 1941, as follows:

Proposed Form: If the owner elects to dismantle the body or trucks, or both, charge may be made for such material, *the renewal of which* would have been required for the repairs covered by the defect card, but such charge to be confined to the actual material stated on card. *Also, in case of items damaged which could have been repaired, labor charge may be made for such items on basis of labor for straightening or repairing same, but no labor charge is permitted for the R. & R. of any part and* no other labor shall be charged in such cases except insofar as labor is already included in the A. A. R. prices for material.

Reason: As a matter of equity. It is felt car owner is properly entitled to charge labor for straightening or repairing parts which are not damaged beyond repair.

RULE 98

The committee recommends that last sentence of present note following Interpretation No. 2 to this rule be relocated as a new Note 3 following Section (g) of same rule, and modified to read as follows:

Note 3.—Where A. A. R. Standard steel wheel gage indicates less than 2/16-inch service metal from full flange contour requirement, such wheel shall be considered as having full flange

contour providing it does not require turning for other reasons.

Reason: To clarify the intent of the rule.

Rule 99

The committee recommends that first paragraph of this rule be modified as follows:

Proposed Form: Rule 99. In no case shall car owner be charged for *two or more* applications of journal bearings if applied within 30 days from initial application at same journal location on same road (etc.—no other change).

Reason: To clarify the intent.

Rule 101

The committee recommends that a new Item 58-B be added to this rule (present Item 58-B to be relocated as new Item 58-C), effective August 1, 1941, to read as follows:

58-B Brake pipe strainer (Pc. No. 502904), net.....$1.08
(To be charged only when this new type strainer is applied in replacement of old style strainer).

Reason: Account change in Rule 60.

The committee recommends that a new Item 134-B be added to this rule, effective August 1, 1941, to read as follows:

134-B Coupler bottom rotary lock lift lever and toggle, riveted assembly, new, A. A. R. type E, single design, net ..... $ 71 .. $ .02

Reason: Account change in Rule 17.

Rule 104

The committee recommends that Section (d) of this rule be modified as follows:

Proposed Form: (d) First application of A. A. R. Standard type "E" 6¼ by 8 inch shank coupler in place of A. A. R. Standard type "D" 6 by 8 inch shank coupler; or of A. A. R. Standard type "E" 5 by 7 inch shank coupler in place of A. A. R. Standard type "D" 5 by 7 inch shank coupler; or of A. A. R. Standard types "D" or "E" in place of former A. A. R. Standard or Temporary Standard couplers where such substitution *provides a total of 2½ inches minimum* side clearance for coupler shank without necessity of altering end of car or spacing of draft members; (etc.—no other change).

Reason: To eliminate confliction with A. A. R. Standard. It is also felt 2½ inches provides sufficient side clearance in such cases. This recommendation is concurred in by the Committee on Car Construction.

Rule 111

The committee recommends that allowance under Item 15 of this rule covering cleaning, lubricating and repairing AB freight brake equipment, be increased from *$7.28 to $7.99;* also, that a new sub-item (9) be added to Section (b) of Item 15 of this rule to read as follows; both changes to become effective August 1, 1941:

(9) Brake pipe strainer (piece No. 502904 or CV-232). To be charged only when this new type strainer is applied in replacement of old style strainer.

Reason: Account change in Rule 60.

Rule 112

The committee recommends that a new item be added to Section J of this rule (for which car owner may request return when cars are dismantled on foreign lines), effective August 1, 1941, to read:

AB brake equipment.

Reason: Car owner is reasonably entitled to return of serviceable AB brake equipment, if desired.

Rule 113

The committee recommends that first paragraph of this rule be modified, effective August 1, 1941, as follows:

Proposed Form: Rule 113. The settlement for a car when damaged or destroyed upon a private track shall be assumed by the railway company delivering the car upon such track; except in the case of a private car damaged or destroyed by or resulting from fire or explosion, or some other condition beyond the control of the delivering line, on private tracks belonging or leased to car owner *or lessee of car,* or while located on the private tracks of a car manufacturing or repair plant under arrangement between car owner and the car manufacturing or repair plant.

Reason: The present rule applies to both railroad and privately owned cars. It is inequitable to place responsibility upon delivering line for such damage when car is on private tracks belonging or leased to lessee of car.

The committee recommends that a new second paragraph be added to this rule, effective August 1, 1941, to read as follows:

When a car of private ownership is damaged or destroyed on the tracks of a road which is not a subscriber to the Interchange Agreement of the Association of American Railroads, the subscriber road delivering the car to such non-subscriber road shall be responsible to the owner for damage to or destruction of the car while in possession of the non-subscriber, except where such car had been forwarded to the non-subscriber road by or upon authority of car owner or lessee.

Reason: For protection of car owner, in event car is delivered by a subscriber road to a non-subscriber road without authority of owner or lessee.

Rule 120

The committee recommends that first paragraph of Section (e) of this rule be modified, effective August 1, 1941, as follows:

Proposed Form: (e) If owner authorizes destruction, handling line shall allow credit for all material at A. A. R. scrap prices, less labor cost of destruction. However, owner shall have the privilege of having returned serviceable cast-steel truck side frames, metal truck and metal body bolsters, metal draft arms, friction draft gears, cast-steel yokes, metal ends, *"AB" brake equipment, auto loading devices,* and *refrigerator car circulating fans;* also *tanks,* special castings and valves of tank cars; by attaching to statement of estimated weights a list of such parts with full shipping instructions; such parts to be billed at A. A. R. scrap value plus *7 per cent* for handling, f. o. b. point of shipment.

Reason: Car owner is reasonably entitled to return of such serviceable parts if desired. Handling charge reduced to harmonize with present storehouse allowance.

Passenger-Car Rules

Rule 4

The committee recommends that the effective date of second paragraph of this rule, with reference to equipping all-steel or steel under-frame cars with cardboards or suitable receptacle for the accommodation of defect and joint evidence cards, now set at January 1, 1942, be extended to January 1, 1943.

Reason: The present situation justifies this extension.

Rule 7

The committee recommends that a new last paragraph be added to Section (e) of this rule (which lists owner's defects), to read as follows:

Failure of roller bearing units, or combination roller bearing and friction bearing units, due to defects or overheating.

Reason: Maintenance of roller bearings is generally performed by car owner. Handling line has practically no opportunity to protect itself against such failures. This recommendation has the concurrence of the Committee on Lubrication of Cars and Locomotives.

The committee recommends that a new first note be added to Section (j) of this rule, present Note to be located as Note 2 and modified, as follows:

(New) Note 1.—For each portion of Universal control valve removed from and for each portion applied to any car, the proper designating symbol as determined by the description shown below must appear on billing repair card.

Designating Symbol	*Description*
Eq. P. U-12	*Equalizing portion U-12—Without strainer cap.*
Eq. P U-12-C	*Equalizing portion U-12-C—With improved cylinder cap having hair strainer.*
QAP U-12	*Quick-action portion U-12—Without quick service or strainer, one ball check, body ¾ in. shorter than U-12-B portion.*
QAP U-12-B	*Quick-action portion U-12-B—With quick service and no strainer, two ball checks, body ¾ in. longer than U-12, vertical grooves on each side of body.*
QAP U-12-BD	*Quick-action portion U-12-BD—With quick service and same body as U-12-B and strainer bolted between body and high pressure cap.*

Proposed Form: Note 2.—When *equalizing portion U-12-C* is removed, it should be replaced in kind. If replaced *with equalizing portion* U-12, proper credit must be allowed car owner as outlined in notes following Item 20-C of Passenger Rule 21. In the substitution of *equalizing portion U-12-C* for *equalizing portion* U-12, car owner is not responsible for the betterment of improved cylinder cap unless the *equalizing portion U-12-C* valve is standard to *the* car as indicated by stenciling. The same principle applies when *the quick-action portion* U-12-BD *is substituted by or for quick-action portion U-12-B or quick-action portion U-12.*

Reason: To clarify the intent and simplify the preparation of repair cards. As recommended by the Committee on Brakes and Brake Equipment.

Rule 8

The committee recommends that Section (e) of this rule (which lists delivering line defects) be modified as follows:

Proposed Form: (e) Journal cut, or requiring reconditioning due to heating, on *friction bearing units;* axles bent; or axles damaged as provided in paragraph (a). When necessary to true up axles in cases of cut journals, if journal is reduced below the limit as prescribed in Rule 7 (e), axle must be changed at the expense of the delivering line.

Reason: Account change in Section (e) of Passenger Rule 7.

Rule 21

The committee recommends that second, third and fourth notes under Item 20-C of this rule be modified as follows:

Proposed Form: Note.—When *quick-action portion U-12* valve is removed and *quick-action portion* U-12-B valve applied, additional charge of $85.00 is proper versus car owner for betterment cost of converting. Likewise, when *quick-action portion* U-12-B is removed and *quick-action portion* U-12 valve applied, car owner must be allowed credit of $85.00. The quick-action or emergency portion of the U-12-B equipment can readily be distinguished from the U-12 type by its having two ball check caps on top of this portion instead of one cap as on the U-12 type; also, by having a vertical groove on each side of its body.

Note.—When *equalizing portion U-12-C* is removed and *equalizing portion U-12* applied, car owner must be allowed credit of $25.39.

Note.—When *quick-action portion* U-12-BD valve is removed, and *quick-action portion U-12-B* applied, car owner must be allowed credit of $23.30.

Reason: To clarify the intent and simplify the preparation of repair cards. As recommended by the Committee on Brakes and Brake Equipment.

The report was signed by J. P. Morris (chairman), general mechanical assistant, A. T. & S. F.; J. A. Deppe (vice-chairman), superintendent car department, C. M. St. P. & P.; W. H. Flynn, general superintendent motive power and rolling stock, N. Y. C.; L. Richardson, mechanical assistant to vice-president and general manager, B. & M.; G. E. McCoy, assistant general superintendent car equipment, Can. Nat'l; W. R. Elsey, general superintendent motive power, Pennsylvania; A. E. Smith, vice-president, Union Tank Car Company, and M. F. Covert, general superintendent of equipment, General American Transportation Corp.

The report was accepted.

Report on Prices for Labor and Materials

In order that the rules may currently provide an equitable basis for inter-road billing, the committee has continued the work of analyzing material, labor and new equipment costs in A. A. R. Interchange Rules 101, 107, 111 and 112 of the Freight Car Code, and Rules 21 and 22 of the Passenger Car Code, with a view of determining and recommending necessary changes to be made in the next supplement to the current Code.

Freight Car Rules

Rule 101

All miscellaneous material prices in Rule 101 were rechecked as of March 1, 1941, quotations submitted by the purchasing agents of the ten selected railroads, representing 39 per cent of total freight car ownership in the United States and Canada, showing a slight upward trend in material markets as indicated by detail recommendations for revisions shown under this rule.

As announced in the 1940 report, a study was made through the Purchases and Stores Division, on nineteen selected railroads representing all portions of the United States and Canada, covering the last six months of 1939, with respect to allowance for store expense used in the make-up of A. A. R. material prices. The result of this study showed a weighted average of the total store expense for the nineteen railroads of 6.71 per cent; and, as result thereof, the 10 per cent allowance formerly used in computing A. A. R. material prices was reduced to 7 per cent effective January 1, 1941. The question having been raised as to whether the period studied was entirely representative, a further study is under way on the same railroads covering the entire year of 1940. If further modification is found necessary as result of this extended study, revision will be made and included in the rules effective January 1, 1942.

The penalty price for the former standard pressed steel box lid has been abrogated, and new price is recommended on basis of current market quotations. The former specification lid continues in use to a considerable extent and is considered satisfactory in service by a number of railroads. In view of this situation, it is felt the lid should stand on its merits insofar as A. A. R. material price is concerned.

Item 105-B has been clarified to indicate definitely the allowance includes material for lumber.

Item 188-D is modified to provide additional material charge for doors constructed wholly or in part of high tensile steel.

Recommendation is made that the average credit allowance for the No. 2 brake beam in Item 210 be reduced to scrap value, with corresponding reduction in the new and secondhand prices. Few railroads are reclaiming this type of beam and the parts cannot be used in reclamation of No. 2-plus or No. 15 brake beams. This recommendation has the concurrence of the Arbitration Committee and the Committee on Brakes and Brake Equipment.

Rule 107

As stated in the 1940 supplementary report, the committee conducted time studies in the field of a considerable number of additional labor operations and, where adjustments were found necessary, modifications were made in the rules effective January 1, 1941.

New note added to Item 22 to clarify the intent with respect to charge for brake hanger renewed in connection with removal and replacement or removal of wheels, bolsters and truck sides.

First note following Item 48 modified to eliminate confliction with note following Item 45.

Third note following Item 126 modified to clarify the intent.

Items 142 and 143 modified and new third note added to Item 143, to clarify the intent that allowances for application of running boards in Items 138 to 143, inclusive, apply to covered hopper cars as well as house cars.

New Item 323-A added and Item 325 modified, to eliminate confliction between Items 267, 323 and 325.

Rule 111

New note added to Item 13, to clarify the intent that the charge

includes all labor and material for triple valve parts, except material for triple valve body.

Rule 112

Recommendations are made in this rule respecting reproduction pound prices of new freight cars of all classes, in order that Supplement of August 1, 1941, may reflect 1940 costs in lieu of figures shown in the present Code. New prices recommended are based on costs of 41,279 freight cars constructed during the year 1940.

Passenger Car Rules

Rule 21

Items 10 and 11 modified to include reference to "express" and "combination mail and express" cars. Third and fourth operations listed under Item 20-C modified to clarify.

Rule 22

Material prices were rechecked on basis of quotations as of March 1, 1941, showing a slight upward trend on a few items as indicated by detail recommendations for revisions shown under this rule.

Item 49 and note following modified to provide charge for service metal in excess of 27/16 in. on wheels of nominal 36 inch diameter.

It is the intent of the Committee to investigate labor and material costs again in October and if sufficient change develops, necessary revisions will be made and inserted in the rules effective January 1, 1942.

The changes recommended in the existing rules were shown in detail in the report.

The report was signed by A. E. Calkins (chairman), superintendent of equipment, N. Y. C.; A. E. Smith (vice-chairman), vice-president, Union Tank Car Company; J. D. Rezner, general car foreman, C. B. & Q.; P. Kass, superintendent car department, C. R. I. & P.; T. J. Boring, general foreman, M. C. B. Clearing House, Pennsylvania; H. H. Boyd, assistant chief motive power and rolling stock, Can. Pac.; and A. H. Gaebler, superintendent car department, General American Transportation Corp.

The report was accepted.

Specifications for Materials

The committee submits the following revisions to certain existing material specifications for consideration: Specifications M-101-39, axles, carbon steel, for cars and locomotive tenders (Exhibit A) and Specifications M-102-40, forgings, carbon steel, annealed and unannealed (new Par. 13 to be added and subsequent paragraphs being renumbered). New Par. 13 is as follows:

13.—Microscopic Tests.—(a) One microscopic test shall be made from each annealing charge. If more than one melt is represented in a charge, one microscopic test shall be made from each melt. The sections for microscopic test shall be cut from the large undistorted portion of the tension test specimen in such a way as will give one face normal and one face parallel to the axis of the specimen.

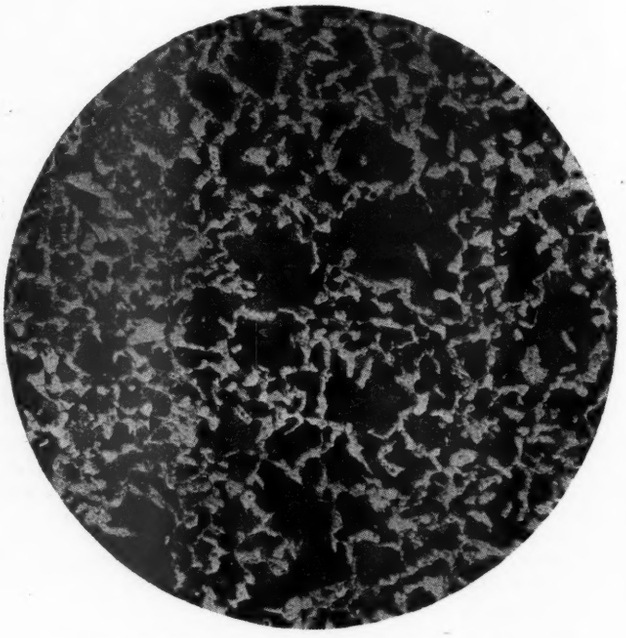
(b) Both faces shall be polished practically free from scratches. The transverse face shall be etched with four per cent solution of nitric acid in alcohol. The longitudinal face to be left unetched. The specimen shall be examined under a magnification of 100 diameters.

(c) The whole of the transverse section shall show uniform, well broken up, fine grained structure, and shall conform to the requirements illustrated in photomicrographs (Exhibit B). Only one irregular mesh as large as ½ in. in diameter shall be permitted in a field 3 in. in diameter, as shown on the screen or photomicrograph.

(d) For information only, the longitudinal unetched face will be examined for solid non-metallic impurities and should show such impurities well scattered over the field.

Specifications M-105-34, blooms, billets and slabs for forgings. Recommended changes to be made are as follows: New Par. 11 (present Par. 11 and subsequent paragraphs renumbered) to be added to this specification, to read as follows:

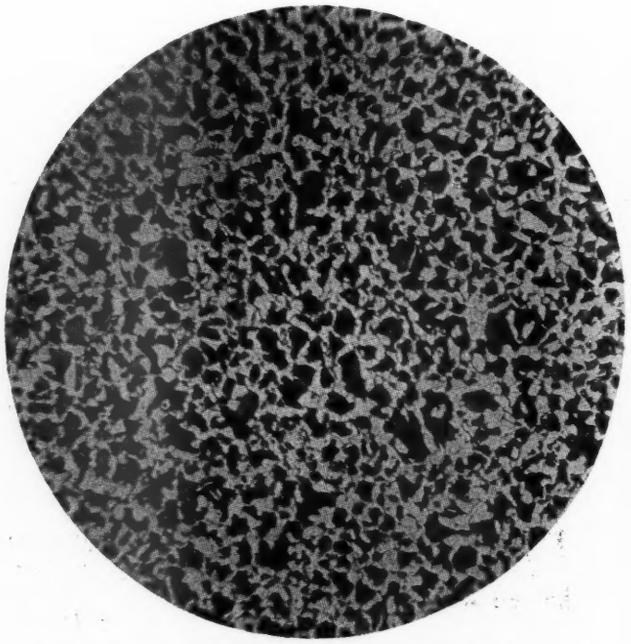
11.—Cutting.—Cutting or parting of material shall not be done by flame cutting except by methods approved by the purchaser involving preheating and temperature control when necessary to avoid any damage to flame-cut surface.



Maximum Grain Structure Acceptable in Grade B Annealed Carbon Steel Forgings

Specifications M-302-40, refined wrought iron bars. Changes to be made as follows: Page 3, Sec. 9 (b):

(b) Bend Test Specimens.—Round, square and hexagonal bars not over 1½ in. in diameter or thickness, and flat bars not over 1½ in. in width or 1 in. in thickness shall be bent in full section as rolled. For larger round, square, and hexagonal bars, the bend specimen may be machined to 1½ in. diameter. For flat



Fine Grained Uniform Structure Desired in Grade B Annealed Carbon Steel Forgings

bars wider than 1½ in. but less than 1 in. thick, the bend specimen may be machined to 1½ in. in width. For flat bars 1 in. or thicker, the bend specimen may be machined to 1 in. square. The edges of the machined specimens shall be rounded to a radius of 1/16 in.

Specifications M-603-38, Hose—Air, Gas and Oxygen, Wrapped and Braided. In compliance with request that a ½-in. size hose for gas and oxygen be included in these specifications, the specification has been revised accordingly, and recommended revision is given in Exhibit C.

Specifications M-607-38, rubber goods, general instructions on standard methods of tests for. Recommended revision of this specification is given in Exhibit D. In addition to some editorial changes, the revision consists of the following: (a) Methods of measuring lengths, diameters and thickness of hose and component parts thereof. (b) Specified A. S. T. M. Die B, ¼ by 2 in., replacing the die now used, of ½ in. (c) Specifying the use of micrometer exerting a force of 3 oz. rather than 9 oz. [Exhibits A, B, C, D are not included in the present abstract of the committee's report.—EDITOR.]

All of the material specifications have been studied in detail during the past year, and while some changes have been agreed upon, in view of manufacturing conditions and the market situation, it is felt inadvisable to recommend changes to be made this year, other than included in the above.

The various members of the Committee on Specifications for Materials have cooperated with other committees in connection with various investigations and specifications drafted by the other committees, handled by them and incorporated in the annual reports of such other committees.

The report was signed by T. D. Sedwick (chairman), engineer of tests, C. R. I. & P.; F. Zeleny, engineer of tests, C. B. & Q.; H. G. Burnham, engineer of tests, N. P.; H. P. Hass, engineer of tests, N. Y. N. H. & H.; J. R. Jackson, engineer of tests, M. P.; H. G. Miller, engineer of tests, C. M. St. P. & P.; L. B. Jones, engineer of tests, Penna.; C. B. Bryant, engineer of tests, Sou.; W. R. Hedeman, engineer of tests, B. & O.; W. F. Collins, engineer of tests, N. Y. C.; and W. Bohnstengel, engineer of tests, A. T. & S. F.

The report was accepted and the recommendations submitted to letter ballot.

Brakes and Brake Equipment

Elimination of excessive leakage of air from the brake pipe has for many years in the past, and is continuing to be, of paramount importance to the operation of and proper control of brakes on freight trains. Experience has indicated that a considerable amount of brake-pipe leakage occurs at the air-hose couplings.

Our 1937 annual report showed a picture of and suggested the use of an air-hose-coupling testing device for submerging the coupling under water and testing before mounting it on the hose. Since that report was made there has been considerable more work done with this device.

There have been a number in service for several years and the results have been very gratifying.

We believe that the use of the above device will eliminate the leaking couplings from service, before they are mounted on the hose, thereby greatly reducing ever present brake pipe leakage, assist in the reduction of train delays and produce better control of train brakes.

We, therefore, recommend the adoption of this device as recommended practice.

Modification of Freight Retaining Valve

New Slow-Release Retaining Valve

The 1940 annual report contained a brief reference to the redesign of the freight retaining valve in order to provide additional protection and variable control of brake-cylinder pressures. During the past year further study has been made of the new four-position slow-release retaining valve for use in freight service.

This new slow-release retaining valve has four positions instead of three. Three of the positions, however, produce exactly the same results as the present A. A. R. standard retainer, that is—direct exhaust with handle in the vertical or down position; high-pressure retain (nominal 20 lb.) in the 45-deg. position; and low-pressure retain (nominal 10 lb.) in the 90-deg. or horizontal position. The fourth position is with the handle at 45 deg. above the horizontal and known as slow-direct-exhaust position. This valve retains all of the features of the present A. A. R. standard and, in addition, includes a fourth position giving a continuous blown down of brake-cylinder pressure to zero pressure for the purpose of providing means for accomplishing improved control of the slack action of freight trains during release of train brakes while in motion, which will result in outstanding operating economies in time and cost, indicated by the following:

(a) Decrease frequency of stopping trains to set up and turn down retaining valves under certain now existing operating conditions.

(b) Decrease frequency of stopping trains to release brakes at lower speeds than is now common practice.

(c) Decrease damage to equipment and lading resulting from improved train slack control when releasing brakes on maximum long trains in **level**-grade operation.

(d) Accomplish smooth train slack control on generally descending and perhaps undulating grades which may contain sections of adverse grades and without changing the retaining valve setting between terminals.

We recommend that the new four-position slow release retaining valve be adopted as recommended practice.

Modification of Present Standard Retaining Valve

If the above recommendation is favorably received, the present A. A. R. Standard Retainer can be readily converted to include the fourth position with the same advantages as above outlined. [An outline drawing of a standard retainer modified to include the slow direct exhaust position as well as a wasp excluder and vent protector was included in the report.—EDITOR.]

We recommend that this conversion be adopted as recommended practice for present equipment, provided the above recommendation for new cars is adopted.

Wasp Excluder and Vent Protector

In our annual reports of 1939 and 1940, reference was made to an improved design of wasp excluder, for the present retaining valve, in which complete protection is provided against mud-wasps restricting or completely plugging the exhaust ports, together with complete protection against ice, sleet or other elements, thus avoiding wheel damage and improper release of the brakes.

We also made reference to a molded-rubber sleeve to fit over the low-pressure cap of the retainer as a means of overcoming wheel troubles caused by moisture entering the valve, causing corrosion and stopping up of the small relief part. We now wish to report that as a result of our investigation and observations of those in service we recommend the use of this type of vent-port protector and the rubber-disc type of wasp excluder in lieu of all previous types submitted.

Cleaning, Testing and Lubricating of AB Valves

During the past year we have made very extensive tests and inspections of 100 Pennsylvania cars and 100 Santa Fe cars that were equipped with AB Brakes and marked "AB Brake—Experimental," having the improved types of bracket strainers.

The average service period of the 200 cars involved was 43 months. The results of the tests and the condition of the valves and equipment as a whole were very gratifying. Tests of complete trains of 100 cars each made before the equipment was disturbed, but as represented by an average service period of 43 months, revealed proper operation after light and heavy service applications and emergency applications as well as the releases.

On rack tests and visual inspection it was revealed, however, that there was some restriction of the service-portion feed grooves and the quick-action-chamber charging chokes. We concluded

from the results, however, that the present three-year cleaning period is not only entirely feasible with valves equipped with the improved strainers, but could be further extended.

Our complete report on this subject with definite recommendations has already been submitted to the General Committee for their consideration.

Standard Brake Beam

Your committee has been making a study of the detailed causes of brake-beam failures and after compiling the data taken from reports of over 34,000 beams removed on various railroads it is interesting to note that worn heads comprise 47.4 per cent of the removals, tension rod defects, either broken, bent or loose rods or nuts missing, 26.35 per cent, and the other 26.25 per cent miscellaneous defects. The three outstanding defects for beam removals are brake head worn at toe, 15.47 per cent, brake head worn at center lug, 13.9 per cent, and tension rod broken at thread, 13.84 per cent.

We are not in a position to make a definite recommendation in connection with this subject, but it is very evident that drastic action must soon be taken to curb brake-beam failures.

Passenger-Car Steam Connectors

The report includes a drawing showing the dimensions for the 2-in. passenger-car steam coupler head similar to that now shown as standard on page 78 of Sect. E of the Manual, except for the addition of grooves to the head to make it suitable for interchange of either the Vapor Car Heating Co.'s or the Gold Car Heating and Lighting Company's gaskets which employ different methods of locking in coupler head. The committee recommends the substitution of this figure showing these grooves in place of present page 78 of Sect. E of the Manual as Standard.

Emergency and Service Pistons for AB Brakes of the Self-Lubricated Type

In order to provide proper lubrication of the service and emergency pistons of the AB valve over extended service periods a considerable amount of development work has been done with a self-lubricated type of piston.

This piston contains an oil chamber with a capacity of approximately 300 drops of oil, which is fed to the piston ring and ring groove in very minute quantities.

There have been a limited number of pistons of this type in service for more than two years and the results have been very encouraging.

The air-brake manufacturers have expressed their willingness to absorb the extra cost involved to make the AB valve with self-lubricating pistons available at no increase in price over the AB valve with the present type of pistons, for all new valves manufactured after a given date, due to the fact that certain reductions in manufacturing cost have been made possible by the elimination of the by-pass check valves and their related parts. The air-brake companies also have stated that the development work and experience which they have had allows them definitely to recommend the use of these pistons and are willing to insure their proper operation.

Inasmuch as your committee has already recommended that authority be extended to permit the use of these pistons to all roads which desire such equipment without limitation; due to the fact that the self-lubricated piston can always be operated the same as the present piston, simply by the removal of the oil, if the occasion should demand; and due to the above assurance and statements made by the air-brake manufacturers, we wish to recommend the adoption of the self-lubricated type of service and emergency pistons in all AB valves manufactured after a certain date, which date should be the earliest practical date that the manufacturers can get in production.

Both air-brake companies are prepared to furnish a common standard for new valves.

We are also studying the possibility of converting the present pistons which are in service to pistons of the self-lubricated type, but to date we can offer no definite recommendations for this conversion.

Different length piston stops are required with the AB test rack when testing portions equipped with self-lubricated pistons than when testing portions with standard pistons.

Combined Dirt Collector and Cut-Out Cock for AB Brake Equipment

Difficulties have been encountered in operating the branch-pipe cut-out cock in the combined dirt collector and cut-out cock of the AB brake equipment, due to high friction between the plug cock and the body. The high friction is caused by the accumulation of rust and the infrequent number of operations.

Tests made on 200 cars revealed that a pull of over 360 lb. was required near the end of the cut-out cock handle on 18 cars to start movement. On the remaining 182 cars an average pull of approximately 133 lb. was required, which is considered to be in excess of the pull capable of being exerted at this point by an average man.

The resistance to start of movement is approximately 45 per cent higher for those units on refrigerator cars than for those on box cars.

The cast-iron body of the present standard unit forms the seat for a brass plug with an enlarged water-way. The manufacturers of this unit have found it possible to equip the standard body with a brass bushing forming the seat for a smaller plug but with sufficient size water-way so that there is no detrimental effect on the performance of the complete brake equipment.

The use of the brass bushing to prevent such corrosion as was present with the cast-iron seat and the reduction in radius of the plug with the same length handle will without a doubt reduce the pull required to start the movement of the cut-out cock and should correct the difficulties encountered.

We have approved this new design of combined dirt collector and cut-out cock for use in interchange as a permissible substitute for the present standard. If further experience proves the adequacy of this unit we shall then, no doubt, recommend its use as standard.

The report was signed by R. E. Baker (chairman), general supervisor of air brakes, air conditioning and power plants, B. & M.; J. A. Burke (vice-chairman), supervisor of air brakes, A. T. & S. F.; W. H. Clegg, general superintendent of motive power and car equipment, G. T W.; T. L. Burton, air brake engineer, N. Y. C.; C. H. Rawlings, superintendent of air brakes, D. & R. G. W.; R. J. Watters, general air brake inspector, N. P.; Otto Swan, air brake instructor, U. P.; J. P. Lantelme, general foreman, Penna.; J. Mattise, general air brake instructor, C. & N. W.; R. E. Anderson, general air brake inspector, C. & O., and R. N. Booker, general air brake inspector, S. P.

Discussion

E. B. Hall, chief mechanical officer, C. & N. W., complimented the committee on its report, but said that it fails to mention a number of things which cause a lot of delays on railroads, such as improper anchorage of brake pipes.

W. E. Vergan, supervisor of air brakes, M-K-T, said that he is in favor of the hose-coupling test device, described in the committee's report, which will lessen the time required for testing, as compared with the device submitted in 1937. He suggested that the use of the improved device be made mandatory instead of recommended practice. Referring to the modification of the retaining valve, Mr. Vergan said that the choke feature should be made available quickly and easily by simply turning a retaining valve handle, thus enabling trainmen to secure maximum benefits in operation. Mr. Vergan stated that slack action can and should be controlled now, not only in long trains but in short trains, especially those operating over hilly country where slack has a tendency to run in and out. He is in agreement with the balance of the committee's report but feels that the Type AB equipment should be good for five years without intermediate inspection and lubrication attention.

In closing the report, Chairman Baker said that the committee is studying the question of proper pipe-clamp design and, in response to a comment by I. C. Bond of the Wabash, regarding the superiority of the No. 3 brake beam with 1⅜-in. rods, said that the committee is also giving consideration to the subject of im-

proved brake-beam performance in conjunction with a committee representing the manufacturers.

The report was accepted and recommendations ordered submitted to letter ballot.

Couplers and Draft Gears

No new certificates of approval for draft gears have been issued during the past year, and the number of approved gears remains at twelve. These are made by six different manufacturers. Two of these approvals are conditional, which signifies that they cover new designs of gears whose service performance will be watched in order to see if unconditional approval is merited.

The two year period for conditional approval has expired for the Waugh-Gould Type 410 gear. No action has been taken to change the status of this gear, since the manufacturer advises that there have been only five of them sold. One of the purposes of conditional approval is to exercise some restraint on the number of gears of a new and untried type which might be placed in service, so that if some defect shows up which the laboratory did not reveal, there will not be an undue burden placed on the railroads.

It has been found that manufacturers desire to maintain unchanged the type designation of an approved gear if an improvement is made, this for the purpose of avoiding the disadvantage of a lower interchange price if the former designation is placed in the non-approved classification. Obviously a bad situation would be created for the railroads if gears of different construction were permitted to retain the same type designation. On the other hand, the committee feels that everything possible should be done to encourage the manufacturers to make improvements in existing approved gears, and there should be no penalty imposed on any manufacturer who does this, or on his customers. In order to overcome this difficulty it is proposed to establish a new classification for approved gears, to be designated as "Superseded Approved Gears." If modifications are made in an approved or conditionally approved gear, a new type designation will be required and the former type designation will be placed in the "Superseded Approved" classification. Gears in this classification will have the same interchange status as "Approved Gears" and will remain in this classification until they become obsolete.

The manufacturer of the Peerless H-1 gear made application for approval of a change in the housing construction, this change consisting of the addition of ribs on the outside of the housing to facilitate substitution for other types of gears in interchange repairs. Subsequently a second application was made covering a change in the design of these ribs, after the first design had been approved without requiring any tests to be made. Suggestions have been made concerning this second design of ribs, and when these are complied with this change will be approved.

The manufacturer of the Westinghouse NY-11-E and NZ-11-E gears has made application for approval of new designs of housings for these gears. These new designs will give housings weighing less which it is claimed are stronger than the previous housings. Since the new housings involve no change in the friction parts of the gear, it has been decided that their suitability can be determined by subjecting three gears of each type to the preliminary, capacity and sturdiness tests. This will be done as soon as test specimens can be obtained.

Check Tests of Approved Draft Gears

During the year a partial retest of one approved draft gear was made in accordance with decision reached after the series of check tests referred to in the report for the past two years. As a result of this retest the certificate of approval was reissued to cover changes that had been made in the manufacture of the gear.

A second type of gear was required to undergo a complete new approval test as a result of its showing in the previous check test, and the manufacturer has filed his application for this new test. Before supplying test specimens he desires to check the effect of modifications in design by making private tests under the Association's drop hammer, and this work has been going on practically continuously since last July. Latest advice is that the manufacturer is about ready to proceed with construction of a lot of gears embodying the newest features, and when these are ready test specimens will be selected.

A new check test of approved gears has been conducted during the past year. The first check test was made on seven types of gears, the other five types of approved gears being omitted either because of their similarity in design to a type included or because they had just recently been approved. Five of these seven types of gears were included in this second check test, the other two types getting special treatment as referred to in the two paragraphs above. The gears included in this second check test, known as the 1940 Check Test, consisted of the following types: Edgewater B-32-KA; Miner A-22-XB, Cylinder D-7935; National M-17-A; Waugh-Gould 403; Westinghouse NY-11-E.

Three gears of each of these types were selected from stock at the manufacturer's plants without advance notice being given when selection was to be made. It was quite noticeable that these gears were superior to the gears secured for the 1938 check test. The parts of the gears were in closer conformity with the manufacturer's drawings which are on record, and the workmanship was better. This was probably a result of the criticisms made after the last test. The gears were in better shape as regards the condition of the friction surfaces, which would be expected from gears taken out of manufacturer's stock. Each of the five gears tested complied with specification requirements in all essential respects, in fact, the performance of the gears in these check tests was in only a few respects less satisfactory, and in some respects more satisfactory, than in the official tests upon which original approvals were based.

Each manufacturer will be advised of the results from the check test of his gear, and such minor discrepancies as were found will be called to his attention for appropriate action.

It is recommended that at the first opportunity the association provide for a series of capacity checks of approved draft gears taken from cars in service. The purpose of these tests would be to secure information as to how the capacity of the gear has stood up in service and its relation to the age of the gear, and to the capacity of new gears obtained in laboratory test. It would show if there is any value in the process of working-in used during manufacture, or if this merely establishes a fictitiously high capacity which disappears after the gear goes into service.

Recommended Changes in Draft-Gear Specifications

Based largely on observations made during the conduct of the two series of check tests of approved draft gears, it is recommended that changes be made in Specifications M-901-37 covering Approved Draft Gears for Freight Service: which will avoid the introduction of any cocking action when the gear closes; to insure that draft gears will be properly worked in during the process of manufacture, and to require furnishing specifications for this working-in process.

It is recommended that Par. 3 (a) of Spec. M-902-37, Purchase Specifications for Approved Draft Gears for Freight Service, be rewritten to agree with the corresponding paragaph in Specifications M-901-37. In the purchase specifications the outside measurements of the gear are designated as such that will permit it to be installed in a pocket the size of which is given, while in the regular specifications the actual measurements for the gear are given.

Tests of Waughmat Draft Gear for Freight Service

The Waugh Equipment Company has developed a rubber draft gear for freight service and has asked for approval for its installation. It is designed for installation in the standard draft-gear pocket. Because its characteristics differ greatly from those of friction draft gears, it has been necessary to proceed differently in the matter of approval. Laboratory tests of an exploratory nature, including all of the regular specification tests, have been made under the association's drop hammer, and car impact tests will be made under the supervision of the sub-committee. Approval has been given for the installation of a limited number of these gears in actual service, and their performance will be closely checked by the committee. The outcome of these investi-

gations will determine the future course of action regarding this gear.

Tight-Lock Couplers Opening in Service

Our report for the year 1940 called attention to some trouble experienced with tight-lock couplers separating in service. It was the opinion of your committee that in view of the investigations made concerning these partings and the corrective measures applied, as well as tests made at that time, the trouble had been definitely corrected. However, during the past winter several additional separations involving tight-lock couplers have been reported.

Careful investigations have been made of each of these partings and the manufacture and gaging of the couplers at the plant of the manufacturer. It has been definitely established that the partings were practically confined to tight-lock couplers cast prior to January 1, 1939. The known exceptions are a few partings involving tight lock couplers manufactured since January 1, 1939, in which the anticreep arrangement had not been properly adjusted.

A study of the individual couplers involved in these separations has shown that these partings would not have occurred had the instructions been properly understood and the corrective measures outlined in the 1940 report been properly performed, especially as regards the adjustment to the secondary anticreep shoulder in the bar.

A joint meeting of your committee with the Mechanical Committee of the Coupler Manufacturers was held in Cleveland on February 27, 1941, at which time this subject of tight-lock coupler separations in service was thoroughly reviewed. At this meeting arrangements were made whereby the coupler manufacturers' representatives were to cooperate further with the railroads in checking tight-lock couplers cast prior to January 1, 1939, and to give instructions and assistance to make further corrective adjustments to the anticreep arrangement in the couplers where necessary.

The Mechanical Committee of the Coupler Manufacturers has prepared Circular No. 441 which shows in full-size arrangement the anticreep feature of the tight-lock coupler, the gages necessary to make these adjustments to the anticreep arrangement, including also detailed instructions covering the procedure to be followed in making these corrections.

All this information has been made available, through the manufacturers, to the railroads having tight lock couplers in service.

Maintenance Knuckle for Tight-Lock Couplers

Tight-lock couplers manufactured prior to January 1, 1939, were produced without the benefit of machining important bearing surfaces and with more or less incomplete gaging practice. As a result of this early production practice such cuplers are not uniform as regards interchange of parts, especially knuckles. These early knuckles may occasionally require replacement and when replaced with the latest standard knuckle the contour line may be a little too tight and cause difficulty in coupling with another tight-lock coupler.

The Mechanical Committee of the Coupler Manufacturers has given this subject careful attention and recommends that tight-lock knuckles furnished the railroads for maintenance should have the thickness of the knuckle reduced 1/16 in. by machining the metal from the pulling face. This change would provide approximately 1/16 in. clearance in a coupler having normal dimensions, but in many of these early couplers this proposed knuckle would provide a closer fitting contour than would be the case with the original knuckle that is being replaced. These knuckles will be furnished only for maintenance purposes and no change is being made in the standard knuckle furnished with new couplers. The catalog number of the standard tight-lock knuckle is T50 and for identification purposes the maintenance knuckle will bear the identification T50A.

Arrangements have been set up by the coupler manufacturers to have the standard tight-lock knuckles, now carried as spares by the railroads, returned to the manufacturers for machining of the face, which machining will be done free of charge.

On account of the necessity for prompt action your committee has authorized the coupler manufacturers to proceed accordingly, subject to your approval.

A. A. R. Tight-Lock Coupler— Contour Maintenance Gage

To insure satisfactory inter-coupling between tight-lock couplers, where any repairs have been made to coupler body or parts, a simple contour gage has been provided. This gage will be furnished by the coupler manufacturers on orders.

Tight-Lock Coupler Specification

Last year, your committee presented specifications for tight-lock couplers and attachments with the recommendation that these specifications be referred to the Committee on Specifications for Materials for approval and then submitted to letter ballot.

The Committee on Specifications for Materials did not approve the specifications as presented by the coupler committee on the grounds that couplers and coupler parts were steel castings and the material used in such parts should be incorporated in the specifications covering steel castings.

Your committee does not look at this proposition in the same light as the material specifications committee, since couplers and parts could not be considered as a general run of steel castings, but represent more particularly a highly specialized product in which only a limited number of manufacturers are engaged in their production.

In view of the important part couplers play in our transportation system and the highly specialized nature of their manufacture, it is the opinion of your committee that all of the requirements surrounding the production of couplers and parts should be incorporated in a single specification.

The tight-lock coupler specification was submitted to letter ballot vote last year and approved. The matter of form for inclusion in the A. A. R. Manual was further discussed with the Committee on Specifications for Materials without agreement being reached. In view of the importance of the specification, it has been placed in the Manual of Standard and Recommended Practice in separate form, pending further conference with the specifications committee.

Protection of Coupler-Operating Mechanism

The investigation to develop a suitable means for the locking of coupler-operating mechanism to prevent accidental opening of the coupler in service resulting from obstacles striking the operating lever is still in progress. It would be a simple procedure to lock the uncoupling rod and bail securely if the couplers were operated from one side, only, at each end of the car. Also, an automatic locking side bracket could be used securely to lock both side operating rods individually. However, complications arise when an attempt is made to lock both the side operating rods and the bail, as a unit, at each end of the car when the operating arrangement is designed to operate from both sides of the car.

A questionnaire has been sent to the membership requesting an expression regarding a preference as to whether coupler operating mechanism on passenger cars should be operated from one side, only, or from both sides of the car. Replies to this questionnaire have not furnished as much information as was anticipated, since in a number of instances those answering were of the opinion that it referred primarily to the operation of tight-lock couplers and therefore many roads not using tight-lock couplers did not express an opinion.

A total of 63 roads replied to the questionnaire; 34 of these roads expressed a preference, 10 for both sides and 24 for one side; the remaining 29 failed to indicate which method of operation was preferred, as it was their interpretation the questionnaire was intended for tight-lock couplers only.

Type-E Couplers Separating

A member road has called attention to the committee's reference in the 1940 report to Standard E couplers separating on ac-

count of inverted or missing rotary lock-lift toggles. The report advocated discontinuing the use of the dowel-type lock-lift lever and toggle, substituting therefor the riveted type. It was the understanding at the time that the coupler manufacturers would discontinue furnishing the dowel type. In investigating the statement made by the member road that the dowel type rotary lock lifter and toggles were still being supplied, it developed that one coupler manufacturer, while not manufacturing any more of the dowel-type lifters and toggles, was taking occasion to fill orders from stock already on hand. This subject was handled through the Coupler Manufacturers Mechanical Committee to the point that no further shipments will be made of the dowel-type lifters and toggles.

Your committee has been advised that the Arbitration Committee will recommend a new paragraph to Sec. (c) of Interchange Rule 17, in which provision will be made for a repairing line to renew the old style bottom lock lifter or toggle, if defective, replacing them with either suitable parts in kind or with the two parts riveted together. In the latter case full charge may be made and scrap credit allowed for the old style parts removed. Your committee concurs in this recommendation of the Arbitration Committee.

Reclamation of Couplers

A study made by the Arbitration Committee in connection with coupler repairs developed that a large number of knuckles were being renewed for the purpose of bringing couplers within gage, whereas, the out-of-gage conditions could have been corrected in a large percentage of such cases by renewing the knuckle lock only, thus reducing expenses to the car owner.

The Arbitration Committee has recommended for the consideration of the Coupler Committee a revision of Rule 18 (a-1) as follows: *Proposed:* Rule 18 (a-1). Couplers, Types D and E, with distance between point of knuckle and guard arm exceeding 5 5/16 in. as measured by gage (Fig. A, Page 55), must have the defective part or parts renewed to bring coupler within required gage of 5 1/8 in. as measured by gage (Fig. C, Page 56). If coupler body is out of gage, the body must not be renewed unless the application of second-hand, reconditioned or new *lock or knuckle, or both,* will not bring it within the required gage of 5 1/8 in. *Likewise, knuckle must not be renewed unless the application of second-hand, reconditioned or new lock will not bring coupler within the required gage of 5 1/8 in.*

It is further recommended that the note accompanying Fig. D, Rule 18, Page 58 of the 1941 Code of Rules be changed from "Condemning limit for cracks horizontally inclined" to "Condemning limit for cracks extending in any direction."

Your committee accepts both recommendations as constructive changes which should be approved by the association and included in the Code of Rules.

Reclamation of Draft Keys—Limits for Wear

In connection with the practice of reclaiming draft keys as recommended in the 1940 report, request has come to your committee that further suggestions be made as to the wear limits within which the draft key reclamation might apply.

In the inquiry made regarding wear limits it developed that some roads have not encountered enough wear on the draft keys to give this subject serious consideration and little or no attention has been given either to wear limits or methods of reclamation. On other roads where the reclamation of draft keys has become a factor in car maintenance, it appears that the wear on the edge of the key is the governing factor in establishing the suitability of the key for reclamation. In other words, if the edge wear is within certain prescribed limits, the wear on the flat surface of the key will not be beyond the range of reclamation set up for edge wear. For this reason, it does not appear necessary to prescribe wear limits for key thickness.

The process of reclamation for draft keys as outlined in the 1940 report will take care of 3/8 in. wear in width at any cross section location. This limit may be applied to both 5-in. and 6-in. keys.

It is the suggestion of your committee that draft keys may be satisfactorily reclaimed if the maximum wear in width does not exceed 3/8 in. at any one point.

Elimination of Coupler-Yoke Filler Blocks

Your committee has been requested to support the recommendations of a local mechanical organization that provision be made for the elimination of filler blocks from the end of the coupler yokes, it being argued that frequently the blocks are missing, thus contributing to excessive slack in coupler attachments.

Your committee considers these filler blocks where used are serving a good purpose, as a protection against yoke or strap breakages and is further of the opinion if more attention was given to the maintenance of the blocks there would be fewer cases where they would be missing. For these reasons the committee does not approve the recommendation to discontinue the use of coupler-yoke filler blocks.

Key Slots in Couplers

It has been the practice of some roads, in order to provide for vertical draft-key attachments to the coupler shank, to burn a slot in the coupler shank between rivet holes. The ragged edges left by the burning of these slots form a ready origin for detail fractures. Applying localized heating to highly stressed parts, especially without annealing, is also conducive to development of fracture.

Your committee has been advised that the Arbitration Committee will include in its report a recommendation prohibiting this practice, and will make further provision that when couplers with burnt-out key slots are removed for any reason, it will be at the expense of the owner.

The coupler committee concurs in this action taken by the Arbitration Committee.

Adding Filler Block in Head of Cast-Steel Yoke

Last year a member raised the question of adding filler block in the head of the cast-steel yoke to restrict the vertical movement of the coupler butt. Your committee has reviewed this matter and reports that the center line of the slot in the coupler butt is 1/8 in. above the slot in the yoke. Key slot in the center sill is on the center line of draft. With the tolerances provided, when the coupler and draft attachments are in place on the car they are all on the horizontal center line, with the vertical weight reaction on the key through the center sills.

In 1923 one of the coupler manufacturers cast yokes with this filler block for application to 1,000 cars. Investigation is going on to develop what, if any, beneficial results were obtained therefrom.

Your committee wishes to express its appreciation to the coupler manufacturers for the cooperative assistance rendered by the Mechanical Committee of the Coupler Manufacturers in the joint work carried on during the past year.

The report was signed by R. L. Kleine (chairman), assistant chief motive power-car, Pennsylvania; H. W. Coddington (vice-chairman), research and test engineer, N. & W.; W. E. Root, chief motive power, D. L. & W.; L. P. Michael, chief mechanical engineer, C. & N. W.; W. Bohnstengel, engineer of tests, A. T. & S. F.; and H. W. Faus, engineer motive power, N. Y. C.

Discussion

There was no discussion of that part of the report devoted to draft gears. At the invitation of the presiding officer, H. W. Gilbert, chairman of the Coupler Manufacturers' Mechanical Committee, said that for many years since the adoption of the Type E coupler the committee has had close and pleasant relations with the Mechanical Division committee and attempted to do whatever was necessary to improve coupler performance. He referred to Mr. Cantley's study of coupler failures at low temperatures and said that this should develop some definitely helpful and useful information.

Mr. Gilbert said that the committee's report contains a clear description of the problem which has arisen in connection with

tight-lock couplers and that the first attempt at corrections did not prove to be entirely satisfactory on account of the lack of proper adjustments. Mr. Gilbert stated that improvements in design, including machining, has enabled tight-lock couplers manufactured since 1939 to give satisfactory service, but further development and improvements are still being sought to be passed on to the Mechanical Division committee.

In response to a question, Chairman Kleine said that when difficulty is encountered due to the knuckle dropping on the bottom wall of the coupler, it is necessary only to apply a washer and raise the knuckle.

J. McMullen, superintendent car department, Erie, referred to the changes in Rule 18 and said that only a small percentage of couplers can be reclaimed by this method, the application of a properly conditioned knuckle being cheaper in the long run. He said that, at the suggestion of a member line which advised changing the lock rather than the knuckle, this method was tried on the Erie and they were not able to bring the pulling face of the knuckle within the gage limits.

E. B. Hall, chief mechanical officer, C. & N. W., said that there is need for a more positive lock, to avoid any possibility of couplers parting. Chairman Kleine replied that the committee feels keenly whenever there is an instance of coupler parting and that, without proper gages and gaging practice, this trouble is bound to occur occasionally. He said that the working surfaces of certain coupler parts must be machined to assure uniform results. With the present improved coupler and a more general knowledge of how to use the gages, he believes that the coupler problem is largely solved, although further improvements are still being studied.

K. F. Nystrom, mechanical assistant to executive vice-president, C. M. St. P. & P., said that the Milwaukee has no tight-lock couplers in service. He hoped that the committee would specify uncoupling from one side, which makes it more practicable to apply a locking device to the uncoupling lever handle. Mr. Nystrom said that he has accumulated from dismantled cars over 1,000 Type D couplers with 5-in. by 7-in. shanks, which he will use by the application of wrought- or cast-steel yokes in the interest of conservation of material.

The report was accepted and recommendations submitted to letter ballot.

Report on Locomotive Construction

Design of Fundamental Parts of Locomotives

Piston Ring Grooves for Lip Type Sectional Packing

The sub-committee was requested to prepare a proposed design of piston grooves that would take all types of lip type sectional packing rings now being manufactured; also, to look into the matter of standardizing grooves for snap type piston rings. It was decided that no consideration of standardizing grooves for snap type piston rings would be made as the majority of the railroads are changing to sectional rings on new piston applications.

Two designs of grooves for lip type sectional packing rings were included in the report—one for the two-ring type, and one for a three-ring type. Grooves 1-in. wide by 1-in. deep were decided on for a standard and, while this size groove does not accommodate some of the rings now being manufactured, the sub-committee felt that manufacturers can change their rings to fit this size groove, and railroads can then use any make of lip type sectional packing without having to change pistons.

It was recommended that this be submitted to letter ballot for inclusion in the Manual as recommended practice.

Cylinder and Valve Head Studs

The sub-committee was requested to prepare a proposed design of studs to be used for holding cylinder heads and valve chamber heads.

Designs were included in the report are for new work, and for repairs to present cylinders where holes have become worn and an over-size stud is required in cylinder end.

It was recommmended that this be submitted to letter ballot for inclusion in the Manual as recommended practice.

Screwed Pipe Fittings for 300 lb. Pressure Seamless Steel Couplings

The present standard coupling shown on Page L-139 of the Manual may be made of malleable iron or steel to A. A. R. Material Specification M-404, which prescribes a breaking test only, no chemical or physical requirements being shown. The design shown on Page L-139 is apparently based on the use of malleable iron, as the wall thicknesses are in general heavier than necessary for steel couplings.

In view of the extensive use of steel couplings the committee has prepared and now submits for approval as recommended practice, a design (a drawing of which is included in the report) which conforms to the standards of the American Petroleum Institute and which will weigh less and should cost less than steel couplings made to present A. A. R. standard dimensions. The material for these couplings is shown as seamless steel, to A. A. R. pipe specification M-111.

The adoption of this design will require a change in the title of the couplings shown on Page L-139 to read "Malleable Iron Coupling."

Fittings for Welding Iron or Steel Pipe on Locomotives

A table was included in the report of 32 replies to a questionnaire sent to a selected list of member roads and the locomotive builders, with respect to the welding of piping on locomotives and the use of special welding fittings. Twenty-one of the 32 replies received reported that piping was welded as indicated in the table, but only four reported the use of any special welding fittings.

In view of the limited use as apparent from the replies received, and inasmuch as welding fittings can be readily obtained in the open market if desired, the sub-committee was of the opinion it is not necessary to set up any standard for special welding fittings and so recommended.

Exhaust Steam Injectors and Exhaust Steam Feed Water Heaters

The sub-committee has continued its studies on the economies of various types of exhaust steam injectors and exhaust steam feed water heaters for the purpose of determining more accurately the operating costs of these appurtenances.

In the previous analysis, the maintenance cost figures were in some cases reported inadequately and in others not given at all because the participating railroads did not detail their accounting records sufficiently to determine actual costs of specific parts repaired or renewed. To develop more accurate maintenance and repair costs, railroads having exhaust steam feed water heaters and exhaust steam injectors in service, were asked to keep a record of all material and labor charges, for both classified and running repairs, for a period of six months, namely July 1 to December 31, 1940.

Such reports were received from 30 railroads for exhaust steam injectors and 53 railroads for exhaust steam feed water heaters of all types.

The statements included in the report show the results of tabulated reports for labor and material costs on a dollar per mile basis for classified and for running repairs, and also a combined cost of labor and material and of classified and running repairs, i.e., a total operating cost for each type of equipment as reported. They are further separated to indicate maintenance and repair costs for the various types of injectors and heaters irrespective of age as compared with similar equipment as applied in the last five years, (1936 to 1940 inclusive). This differentiation was deemed advisable to show the difference in cost for maintaining injectors and heaters regardless of age and for maintaining injec-

tors and heaters which are comparatively new or considered modern.

Development and Use of Oil-Electric Locomotives

This sub-committee has continued to assemble information as to the extended use of this type of equipment, and has brought up to date all information previously assembled by adding thereto units placed in service during the year 1940.

As of December 31, 1940, 1,111 units had been placed in operation since 1925, 362 of which, or 33.5 per cent were placed in service during the year 1940. There were 157 units on order as of January 1, 1941, which exceeds considerably the number of units on order at the beginning of any previous year.

Prior to the year 1940 there were 44 units between 2,000-hp. to 6,000 hp. in service. During the year 1940, 49 additional such units were placed in service.

The accompanying table indicates the rate of increase of Diesel-electric installations of varying horsepowers for the year 1940 as compared with units of the same horsepower placed in service prior to January 1, 1940:

Horsepower	Delivered 1940	Delivered prior to 1940	Per cent increase during 1940
Less than 300	1	25	4.0
300 to 600	60	131	45.8
600 to 900	155	367	42.3
900	...	80	...
950 to 2,000	97	102	95.0
2,000 to 6,000	49	44	111.0
Total	362	749	51.7

Another table in the report shows the assignment of the Diesel locomotives in service as of December 31, 1940 by class of service, and whereas prior to January 1, 1940, 676 units, or 90.5 per cent of the total, were in switch and transfer service, as of December 31, 1940 there were 973 units in switch and transfer service and accounted for 87.5 per cent of the total. Units in road freight service increased from 4 in 1939 to 20 as of December 31, 1940, and the total units in road passenger service increased from 69 to 118. In other words during the year 1940 the rate of increase of switchers kept pace with previous years, but the installation of Diesel-electric locomotives in road service exceeded any previous year.

In an attempt to determine the availability of Diesel-electric locomotives, lubricating and fuel oil performance, and cost of repairs as divided between electrical equipment, Diesel equipment, and total, 138 railroads were requested to furnish information covering the above items. Fifty-nine railroads advised they did not operate Diesel locomotives, 30 railroads furnished information in time and in such form that it could be included in this report, and the remainder of the railroads did not report or the information was not furnished in the form requested.

A five-page table included in the report shows the details of operation for the six months period from July 1 to December 31, 1940. The report is assembled on the basis of unit costs per hour in the case of locomotives in switch and transfer service, and unit costs per mile for locomotives in road service. The information included covers only locomotives which had been placed in service prior to January 1, 1940, since low maintenance costs and high availability is expected from locomotives less than one year old, and to have included such locomotives in the statement, would not have reflected as accurately what might be expected in the way of average performance.

The committee emphasized that the reports of lubrication, fuel, and maintenance costs shown in the table cover only a six months' test period and while considerable variation in the unit repair costs to locomotives of the same horsepower and of approximately the same age may appear, this is due to the fact that in some cases the hours or miles operated during the test period were reduced on some locomotives account of being held out of service for repairs, and at the same time there was an increase in the repair costs due to these repairs. This resulted in a high average cost for the test period, which, of course, will be reduced as additional miles are accumulated.

[The table in the report entitled "Record of Operation and maintenance cost of Diesel-electric Locomotives" included the following *averages* of selected items for an entire group of locomotives in the horsepower class shown:

Loco. hp.	Hours operated per month	Per cent of assignment operated	Repair cost (total)	Cost per hour (cents)	Cost Per mile (cents)
Switching Locomotives					
300	467	73.55	$1,395.23	.4978	....
600	628	90.93	1,413.63	.3749	....
660	634	94.18	1,088.79	.2864	....
900	590	89.27	2,539.06	.7166	....
1,000	655	92.36	1,171.35	.2981	....
Road Locomotives					
600	17,224*	99.23	7,030.85	....	.0680
660	13,748*	99.33	5,453.26	....	.0661
1,000	2,408*	88.09	6,579.19	....	.4553
1,800	24,218*	99.67	10,744.67	....	.0739
2,000	19,989*	98.94	12,276.69	....	.1024
3,600	23,736*	....	70,182.44	....	.4928
4,000	23,220*	100.00	28,315.13	....	.2032

* Miles operated per month.

It should be noted that the above selected items are *averages* drawn from the cost records of as few as two locomotives in some horsepower groups to as many as 82 locomotives in other groups and of locomotives of from a few months to over 15 years in service.—Editor]

However, the committee felt that the information assembled is of sufficient scope and that the average performance shown for the locomotives of the various horsepowers is sufficiently accurate to permit those interested to estimate with a fair degree of accuracy what they might expect from contemplated installations as to availability, lubrication, fuel and repair costs.

Standardization of Valves—Globe and Angle Valves for Steam Locomotives for 300 lb. Pressure

During the past year the committee has been studying the design and construction of the standard globe and angle valves with a view to incorporating any changes which it is felt would improve the serviceabilty, and at the present time has the following recommendation to make.

Fit Between Disc and Stem

To provide for closer tolerances on the fit between disc and stem in order to avoid any excessive looseness, and between body and bonnet, certain changes in dimensions of these parts have been made, which are included on revised pages F-155, 157, 159, 161, 165, 167 and 169 of the Manual now submitted for approval. These changes will reduce the clearances between stem and disc nut, end of stem and bottom of disc, and body and bonnet, and will effectively improve the fit of the bonnet, stem and disc assembly.

The committee is studying certain other changes but is not prepared to report further at this time.

Shelling of Trailer Wheel Tires

In February, 1934, the Locomotive Construction Committee appointed a sub-committee to confer with a technical committee of American tire manufacturers, to study failures of driving and trailer wheel tires on locomotives. A questionnaire was prepared, and data collected from Member Roads.

The study on driving wheel tires was completed and so reported in November, 1937, and Member Roads advised to confine the study, commencing June 1, 1937, to the shelling of trailer tires. The data developed that six roads were having most of the trouble, and at a committee meeting March 9, 1938, this study was confined to the Boston & Maine; Chicago & Eastern Illinois; Great Northern; Louisville & Nashville; Norfolk & Western and Southern.

During December, 1938, a committee was appointed, and visited the shops of these six roads to study shelling and shop practices. Suggestions were made by this committee during its visit. The study was continued up to October 1, 1940.

Conclusion

Many of the roads experience no trouble with shelling of

non-heat-treated trailer tires, while others have had serious trouble.

This shelling has taken place on particular types of locomotives, and in many cases on particular divisions, with locomotives in fast and heavy service.

The record indicates clearly, after approximately four years' study, that the service obtained by the use of heat-treated quenched and tempered) trailer tires has practically overcome the shelling condition, and, in addition, has greatly increased the mileage on tires, as indicated by an average of 22,000 miles per 1/16 in. of wear on heat-treated (quenched and tempered) tires, and an average of 6,800 miles per 1/16 in. of wear on non-heat-treated tires.

This study covered 997 heat treated (quenched and tempered) tires, and 3,972 non-heat-treated tires.

One road made a test of normalized tires, but due to the very poor results obtained, discontinued the purchase of normalized tires.

It is recommended that railroads experiencing trouble due to the shelling of trailer tires use heat-treated (quenched and tempered) tires and follow carefully the Locomotive Tire Manual in the preparation of wheel centers and tires, and the application of tires to the wheel centers.

Roller Bearings for Steam Locomotives and Tenders

The sub-committee has continued to assemble information as to roller bearing applications to steam locomotives and tenders during 1940, and has obtained further information and experiences from roads using such bearings.

Roller Bearing Applications in the United States and Canada Up to December 1, 1940

	Timken	SKF	ASF	Hyatt	Fafnir	All
Total engine truck bearings applied	2234	2278	396	0	0	4908
Total all driver bearings applied	3622	518	0	0	0	4140
Total trailer truck bearings applied	1258	666	430	0	0	2354
Total tender truck bearings applied	6388	4100	2340	116	168	13112
Per cent of total engine truck bearings applied	45.51	46.41	8.08	0	0	.....
Per cent of total driver bearings applied	87.49	12.51	0	0	0	.....
Per cent of total trailer truck bearings applied	53.44	28.29	18.27	0	0	.....
Per cent of total tender bearings applied	48.72	31.27	17.85	0.88	12.81	.....
Per cent bearings reported of total number applied, engine truck	85.58	64.18	50.51	....	....	.....
Per cent bearings reported of total number applied, drivers	90.12	80.31	....	....	....	.....
Per cent bearings reported of total number applied, trailer truck	81.08	70.57	31.16	....	....	.....
Per cent bearings reported of total number applied, tender	96.18	84.39	44.19	100.00	14.28	.....

[The report included, in addition to the data on applications shown in the accompanying table, a detailed tabulation of bearing service records showing mileages made by different types of roller bearings, the number and cause of bearing failures and the mileage per failure. The report also included tabulations of bearing maintenance costs, mileages between failures and axle failures.—EDITOR]

The sub-committee on roller bearings for locomotives and tenders is investigating the standardization of pedestal widths for roller bearings on steam, electric and Diesel freight, passenger and switch locomotives and will cooperate with the Car Construction Committee on similar standardization for pedestal widths on tender roller bearings.

Locomotive Boiler Construction by Fusion Welding

Since 1935 the Mechanical Division has been following an investigation of the construction of locomotive boilers by the fusion welding process.

At a meeting of the General Committee of the A. A. R. June 25, 1935, action was taken to instruct the Committee on Locomotive Construction to consult with representatives of the locomotive builders and start a preliminary investigation covering the basis of procedure in connection with the subject, and also to include in its study the matter of such tests and research as should be conducted and an estimate of cost.

On October 11, 1935, the committee received a letter from G. S. Edmonds, superintendent motive power, Delaware & Hudson, in which he stated they had for four and one-half years, in collaboration with the American Locomotive Company, been carefully studying and investigating the development of a welded conventional locomotive boiler.

In view of the fact that the D. & H. contemplated building such a boiler, the committee decided to join forces with the locomotive builders and representatives of the welding societies.

A design was developed and presented to J. M. Hall, chief inspector of locomotive inspection, Interstate Commerce Commission, with a formal request for permission to proceed with the construction of the boiler. Mr. Hall gave his permission, provided the design of the boiler, specifications and material met the approval of the Committee on Locomotive Construction and also the General Committee. This was all passed upon and approved, and the American Locomotive Company proceeded with construction at its Dunkirk, N. Y., plant, all welding being carefully supervised and X-rayed. Upon completion, it was sent to Chattanooga, Tenn., to be stress relieved, and returned to American Locomotive Company for installation of the firebox and final completion. Hydrostatic and hammer tests were made on March 18, 1937, at the Schenectady, N. Y., plant of the American Locomotive Company. The boiler was then delivered to the Delaware & Hudson and applied to locomotive No. 1219. In order to comply with federal requirements it was used as a stationary boiler for a period of from one month to six weeks for observation and check.

Locomotive No. 1219 was placed in freight service on September 24, 1937, for operation on the Pennsylvania Division of the Delaware & Hudson between Wilkes-Barre and Oneonta, N. Y., a run of 130 mi. The federal requirements stated that in the first year of service the lagging and jacket was to be removed and the joints examined each three months, in the second year each six months, and yearly thereafter for a period of five years. Each time the hydrostatic test was made it was not less than 50 per cent above the working pressure. Following is the report of inspections for the first, second, third and fourth quarters of the first year:

First Quarter: Locomotive No. 1219 was taken out of service at Colonie, N. Y., December 19, 1937, for the first three-months inspection of fusion welded boiler. Jacket and lagging was removed to enable inspection of welded seams. Pressure of 225 lb. was applied and careful inspection made of all welding of shell, wrapper, and firebox sheets of this boiler, and same found in good condition.

Second Quarter: Locomotive No. 1219 was taken out of service at Oneonta, N. Y., March 19, 1938, for the second three-months inspection of fusion welded boiler. Jacket and lagging was removed to enable inspection of welded seams. Pressure of 225 lb. was applied and careful inspection made of all welding of shell, wrapper, and firebox sheets of this boiler, and same found in good condition.

Third Quarter: Locomotive No. 1219 was held at Oneonta, June 18, 1938, for the third three-months inspection of welded seams. Pressure of 225 lb. was applied and careful inspection made of all welding of shell, wrapper, and firebox sheets of this boiler, and same found in good condition.

Fourth Quarter: Locomotive No. 1219 was held at Oneonta, September 17, 1938, for annual test and inspection of fusion welded boiler. Jacket and lagging was removed to enable inspection of welded seams. Hydrostatic test was applied at a pressure of 340 lb. and careful inspection made of all welding of shell, wrapper, and firebox sheets of this boiler, September 20, 1938, and found to be in good condition.

The first semi-annual inspection for the second year of service was made on April 3, 1939, at the Colonie Shops of the Delaware & Hudson, at which time the jacket and lagging was removed to enable inspection of the welded seams in this boiler. A test of 340 lb. pressure was applied and at this inspection it was found that the welding on the shell and wrapper sheets of the boiler and firebox when examined was found to be in good condition. As a matter of fact, since the boiler was first placed in service there have not been any signs of a simmer or leak from any of the welded seams. Up until the time of this inspection the locomotive had approximately 105,000 miles of service.

The second semi-annual inspection in the second year of service was made on November 17, 1939, at Oneonta, N. Y., at which time the jacket and lagging were removed to inspect the welded seams. An hydrostatic test of 350 lb. pressure was applied and careful inspection was made. The welding on shell and wrapper sheets of the boiler and firebox was carefully examined and found to be in good condition. Up to that date there had not been a simmer from any of the welds. The locomotive at that time had 134,000 miles of service.

The first annual inspection of locomotive No. 1219 in its third year of service was made on July 9, 1940, at the Colonie Shops of the Delaware & Hudson in accordance with federal requirements. All conditions of the boiler were found entirely satisfactory.

There will be another inspection for the fourth year of service, probably in July, 1941, and for the fifth year in July, 1942. The committee will continue to follow this matter during the period of inspections required by the I. T. C. Bureau of Locomotive Inspection, and furnish further reports until the conclusion of the test period.

Locomotive Boiler and Firebox Materials and Construction

A questionnaire requesting detailed information on boiler and firebox materials and construction was prepared by the committee and issued to 30 representative railroads and the 3 locomotive builders.

Replies covering 81 classes of locomotives of 15 different types or wheel arrangements have been received and tabulated.

The tabulation shows the latest practice in locomotive boiler construction on the railroads reporting, and the size of the boilers ranges from 73⅝ in. to 103¼ in. inside diameter, first course.

The report contained tabulations of structural details selected to show the trend in design of modern boilers.

The information obtained has been tabulated and furnishes a voluminous amount of data on design and construction of modern locomotive boilers, blueprint copies of which can be obtained from the Secretary, if desired, at cost of reproduction.

Research on Axles, Crank Pins and Bearings

An outline of test covering three different methods of making the crank pin fit in the wheel center and methods of converting the axle testing machines at the plant of the Timken Roller Bearing Co. in order to make the crank pin tests have been worked up. Appropriation for making the test has been granted by the Association, and tests will be started as soon as possible after the work of testing car axles is concluded. This will be approximately August, 1941. It is anticipated that a full report on the results of these tests will be ready for the annual meeting in 1942.

Stresses in Locomotive Rods and Motion Work

The committee was assigned the task of revising the Standard Checking Formulas for Main and Side Rods which were adopted in 1914 and are shown on Pages F-9 to 13, inclusive, of the Manual, with the particular purpose of providing designs which will have the required strength without excess weight.

During the progress of the study, many existing designs of main and side rods on various types of locomotives were investigated and analyzed, and the formulas now proposed, with the stress limitations shown, represent the conclusions reached to attain the desired objectives.

An effort has been made to simplify the processes of calculation and two pages were submitted for inclusion in the Manual as recommended practice to cover all the necessary formulas for main and side rods.

Standardization of Wrought Steel Wheels for Diesel Locomotives

The sub-committee prepared a questionnaire asking for information in connection with the present design of wrought steel wheels used on Diesel locomotives.

Various railroads were solicited, along with the manufacturers of Diesel locomotives, and from the data collected, a table of proposed standards was prepared and included in the report of Committee on Wheels, dated May 27, 1940.

This table has been revised to include wheels of 33 in. diameter.

The committee feels that the standardization of wrought steel wheels for Diesel locomotives is absolutely necessary at this time; further, that there would be no conflict with wheel and axle tests now being conducted by the A. A. R., and it is felt that these proposed standards can be adopted.

It was recommended that they be submitted to letter ballot.

Standardization of Wrought Steel Wheels for Locomotive Trailer Trucks

The sub-committee appointed to investigate and make recommendations on the standardization of the design of wrought steel wheels for locomotive trailer trucks prepared a questionnaire and solicited information from 142 railroads; replies were received from 117 roads.

The tabulation of this data shows 90 different designs of trailer wheels in use with wide variations. A further study of this data is now being made.

Progress is being made on the preparation of a table to show the proposed Standard of Wrought Steel Wheels for Locomotive Trailer Trucks.

Standardization of Wrought Steel Wheels for Locomotive Tenders

Data was collected by the sub-committee, and a table of proposed standards was prepared. Tentatively, this table was included in Report of Committee on Wheels, dated May 27, 1940.

At meeting of the sub-committee held in New York on January 16, 1941, it was decided to continue the above subject, awaiting the completion of tests of axles and wheels now being conducted on the A. A. R. test machine at the Timken Roller Bearing Company's Plant at Canton, Ohio.

The report was signed by H. H. Lanning (chairman), mechanical engineer, A. T. & S. F.; H. P. Allstrand (vice-chairman), assistant to chief executive officer, C. & N. W.; E. L. Bachman, general superintendent motive power, Pennsylvania; F. E. Russell, mechanical engineer, Sou. Pac.; W. F. Connal, chief mechanical engineer, Can. Nat'l; J. E. Ennis, Engineering assistant, N. Y. C.; J. B. Blackburn, mechanical engineer, C. & O.; L. H. Kueck, chief mechanical engineer, Mo. Pac.; W. H. Sagstetter, chief mechanical officer, D. & R. G. W.; and K. Cartwright, mechanical engineer, N. Y., N. H. & H.

Discussion

In discussing this report, the privilege of the floor was extended to manufacturers of both steam and Diesel locomotives.

R. T. Sawyer, sales engineer, American Locomotive Company, said that the report contains the most comprehensive figures on Diesel locomotive maintenance costs which he has seen up to the present time. He stated that a careful analysis of Alco Diesel locomotive maintenance costs shows that 900- and 1,000-hp. switchers average 29 cents an hour, these locomotives being about two years old. Alco 600-hp. Diesel switchers, which have been in service upwards of four years, are costing 28 cents an hour for maintenance.

L. Richardson, mechanical assistant to vice-president and general manager, Boston and Maine, asked the committee what other changes in globe and angle valves for 300 lb. are referred to in the report. Chairman Lanning replied that nothing of great im-

portance was being studied, but the committee was considering a provision for a bonnet bushing and also a valve design for higher temperature and pressure.

J. M. Hall, director, Bureau of Locomotive Inspection, I. C. C., stressed the importance of having good threads on valves, and this did not mean valves with threads that only tightened on the last half turn. He spoke of 300-lb. valves of a special material being produced by some manufacturers that will not deteriorate which are well worth the consideration of the Mechanical Division.

E. B. Hall, chief mechanical officer, C. & N. W., asked if the committee took account of the range in carbon content necessary to avoid the shelling of trailer wheels, and said that experience on the C. & N. W. indicates the probability of trouble with a carbon content above 0.72 per cent.

H. W. Coddington, chief chemical and test engineer, N. & W., said that trouble with trailer tire shelling on the N. & W. did not seem to follow any direct reason, but it was cured by proper heat treatment, the hardness being kept within a range of Brinell 321 to 363. He stated that experience with heat-treated tires on the N. & W. is highly gratifying.

C. B. Bryant, engineer of tests, Southern, said that shelling of trailer tires on this road has been confined to a small group in one territory and that the solution of the problem did not require going to heat-treated tires.

In discussing that part of the report devoted to a fusion-welded boiler, A. G. Hoppe, assistant mechanical engineer, C. M. St. P. & P., called attention to the record of the D. & H. boiler in having stood several weeks of stationary test service, three years of road service, and now almost 12 additional months of road service without any indication of distress, or even minor leakage. He suggested that this type of construction may help solve the problem of securing adequate capacity in modern high-pressure steam locomotive boilers and still keep within space and weight limitations without going to the use of high-tensile alloy steels.

Mr. Hoppe mentioned difficulties in designing boiler shell portions for 285 to 300 lb. pressure and said that in addition to increasing the weight unnecessarily, single and double-lap riveted seams introduce abrupt changes in boiler section with attendant unsymmetrical design, stress concentrations and the possibility of cracks developing. This is due to mechanical working and also to caustic embrittlement which implies a combination of high stress in conjunction with small leaks of concentrated boiler water having certain chemical characteristics. Repairs to this type of construction not only keeps the locomotive out of service, but reproduces the construction in kind and does not get away from the difficulties.

Mr. Hoppe said that designers have apparently reached the limit of construction with conventional riveted boilers in which severe forming stresses, in conjunction with cold working and heavy calking, intensify stress concentration and are a potential source of difficulty. He urged the immediate need of utilizing welded boiler construction and said that if this cannot be permitted until some later date, the intermediate time should be utilized in preparing rules and regulations to govern the safe construction of fusion-welded boilers.

Mr. Hoppe suggested that rules for the proper construction of welded boilers should include the use of modern X-ray testing equipment, stress-relieving furnaces, etc., which will permit going back to low-carbon steel. He said he is not suggesting that fusion-welded boilers be constructed in railroad shops, but that they be purchased from reliable locomotive and boiler manufacturers having necessary modern welding technique and equipment.

John M. Hall, director, Bureau of Locomotive Inspection, I. C. C., said that welding methods, equipment and materials, including the covered electrode, have been vastly improved during the past decade, making possible the D. & H. fusion-welded boiler which was constructed of selected materials, with downhand welding, most carefully supervised and the boiler being subsequently stress relieved. He said that this boiler has given excellent service to date but this limited experience is not enough to justify letting individual railroads go ahead at will and use boilers constructed by the fusion-welding process. Even on the D. & H. boiler, Mr. Hall said that if a crack develops it will have to be repaired by conventional methods rather than welding, which is a manufacturer's job.

James Partington, manager, engineering department, American Locomotive Company, said that the welded boiler in industry is an established fact and he hoped that all present would live to see welded boilers widely used in railway service. He said that the boiler difficulties mentioned by Mr. Hoppe can be duplicated on other roads. To permit stress relieving any welded boilers it may build, the American Locomotive Company, he said, has available a large annealing furnace at Dunkirk, N. Y. Mr. Partington stated that adequate welding rules are now in existence and, in fact, many welded locomotive-type boilers embodying welded construction and utilizing pressures up to 350 lb. are now in use, largely in the oil industry. He paid tribute to the ability of railroads to do a greatly improved welding job, as compared with a few years ago, many roads now following the American Welding Society rules for qualifying welders, using covered electrodes, and doing good welding jobs. Mr. Partington said that the riveted boiler has come to a place where it must be improved and the construction of welded stationary boilers carrying up to 2,200 lb. pressure in drums and super-heaters shows what can be done. Mr. Partington credited the American Welding Society and the Boiler Code Committee of the American Society of Mechanical Engineers with real contributions to the improvement of standards of welding performance.

Chairman Lanning referred to the important but limited amount of information regarding rod stresses included in the committee report, and said that the formulae presented by Mr. Ennis represents almost two years' work on the part of both railroads and the builders; and these rod designs have been tested and represent the lightest safe weights usable in high-speed service.

C. T. Ripley, chief engineer, Technical Board, Wrought Steel Wheel Industry, expressed appreciation for the opportunity of working with the committee and made a strong plea for greater standardization of steel wheels used in all classes of service. He said that standardization produces a number of definite benefits, such as reduction in unit cost, fewer wheels carried in stock, more prompt delivery, and that these advantages are especially important today. Mr. Ripley suggested that, as a preliminary to reducing the great number of steel wheel sizes and types now in use, it would be well worth while for each road to appoint a single competent man to canvass the steel-wheel situation on that road, determine how many non-standard wheels are being used, and see what can be done to reduce the number. He said, for instance, that in his opinion the 20 standard Diesel locomotive wheel sizes could be readily reduced to five. He suggested that the Locomotive Construction Committee study the subject of trailer-wheel hub faces of which there are a great variety of sizes far more numerous than necessary to meet varying strength requirements. Mr. Ripley said there should be a possibility of reducing about 90 of these sizes to 6. He urged that more railroads follow the recommendations of the Wheel Committee, and any roads which feel it necessary to depart from the standards in particular instances should submit proposed variations to the committee before burdening the railroads and the wheel industry with additional non-standard steel wheels.

Chairman Lanning said that in view of the urgency of the trailer wheel problem, improvements in wheel construction and design will be made available to the Mechanical Division membership by the committee without waiting for the annual meeting. The committee has under consideration the subject of standardizing trailer-wheel hub faces, as suggested by Mr. Ripley.

The report was accepted and referred to letter ballot.

Report on Wheels

Through the courtesy of the Association of Manufacturers of Chilled Car Wheels, your committee has been furnished a list of the commercial manufacturers of cast iron wheels that are subject to the association's recommended practices and inspection.

It is gratifying to note all the commercial wheel plants with the exception of two manufacturers in the states and two in Canada are taking advantage of the facilities offered through the association for developing an improved wheel product.

Grinding of Cast-Iron Wheels

As more attention is given to grinding of cast-iron wheels it is desirable that recommendation be made as to some means by

Revised Table A-1 Showing Dimensions (with Tolerances) of Multiple-Wear Wrought-Steel Wheels for Axles with Enlarged Wheel Seats

Axle class, in.....	4¼ x 8	5 x 9	6 x 11	5 x 11	6 x 11	7 x 13	6 x 11	7 x 13	6 x 11	7 x 13
	5 x 9	6 x 11	5½ x 10	6½ x 12	6½ x 12	7½ x 14	6½ x 12	7½ x 14	6½ x 12	7½ x 14
	5½ x 10	6½ x 12	5½ x 10	6½ x 12	6½ x 12	7½ x 14	6½ x 12	7½ x 14	6½ x 12	7½ x 14
Wheel class.....	33G	33H	36C	36D	38A	38B	40A	40B	42A	42B
a (in.).....	1 +1/16 −0	1 +1/16 −0	1 +1/16 −0	1 +1/16 −0	1 +1/16 −0	1 +1/16 −0	1 +1/16 −0	1 +1/16 −0	1 +1/16 −0	1 +1/16 −0
b (in.).....	1 3/32 +1/16 −0	1 3/32 +1/16 −0	1 3/32 +1/16 −0	1 3/32 +1/16 −0	1 3/32 +1/16 −0	1 3/32 +1/16 −0	1 3/32 +1/16 −0	1 3/32 +1/16 −0	1 3/32 +1/16 −0	1 3/32 +1/16 −0
c (in.).....	11/16 +1/16 − 1/16	11/16 +1/16 − 1/16	11/16 +1/16 − 1/16	11/16 +1/16 − 1/16	11/16 +1/16 − 1/16	11/16 +1/16 − 1/16	11/16 +1/16 − 1/16	11/16 +1/16 − 1/16	11/16 +1/16 − 1/16	11/16 +1/16 − 1/16
d (in.)[1].....	33	33	36	36	38	38	40	40	42	42
	+14 tapes −0	+14 tapes −0	+14 tapes −0	+14 tapes −0	+14 tapes −0	+14 tapes −0	+14 tapes −0	+14 tapes −0	+14 tapes −0	+14 tapes −0
g (in.)[1].....	2½ min.	2½ min.	2½ min.	2½ min.	2½ min.	2½ min.	2½ min.	2½ min.	2½ min.	2½ min.
	3 min.	3 min.	3 min.	3 min.	3 min.	3 min.	3 min.	3 min.	3 min.	3 min.
l (in.).....	5½ +1/16 − 1/16	5½ +1/16 − 1/16	5½ +1/16 − 1/16	5½ +1/16 − 1/16	5½ +1/16 − 1/16	5½ +1/16 − 1/16	5½ +1/16 − 1/16	5½ +1/16 − 1/16	5½ +1/16 − 1/16	5½ +1/16 − 1/16
n_1 (in.).....	¾ min.	¾ min.	¾ min.	¾ min.	¾ min.	⅞ min.	⅞ min.	⅞ min.	1 min.	1 min.
n_2.....	1 min.	1 min.	1 min.	1 min.	1 min.	1⅛ min.	1⅛ min.	1⅛ min.	1¼ min.	1¼ min.
o (in.).....	11[2]	12[2]	13[2]	13½[3]	12[2]	13½[3]	12[2]	13½[3]	12[2]	13½[3]
p (in.).....	7 +1/16 − 1/16	7 +1/16 − 1/16	7½ +1/16 − 1/16	7½ +1/16 − 1/16	7½ +1/16 − 1/16	7½ +1/16 − 1/16	7½ +1/16 − 1/16	7½ +1/16 − 1/16	7½ +1/16 − 1/16	7½ +1/16 − 1/16
q (in.).....	3 11/32 +0 −1/16	3 11/32 +0 −1/16	3 3/32 +0 −1/16	3 3/32 +0 −1/16	3 3/32 +0 −1/16	3 3/32 +0 −1/16	3 3/32 +0 −1/16	3 3/32 +0 −1/16	3 3/32 +0 −1/16	3 3/32 +0 −1/16

1—Standard wheels have diameters as shown in the table with rims 2½ in. thick. If rim 3 in. thick is used, the metal is added on the outside, making the actual minimum diameters 34, 37, 49, 41, 43 in.

2 Minimum hub wall 1¼ in.

3—Minimum hub wall 1½ in.

which the wheel-shop forces can identify wheels suitable for the grinding process without reducing the chill portion of the tread beyond serviceable limits.

In recognition of this requirement, your committee has outlined methods of procedure presented as Appendix A. In this recommendation, two methods are suggested; one refers to the relationship of tape sizes to available service metal while the second, or alternate, is confined to measurements as established by a modification of the tread worn hollow remount gage. In the application of this gage, two suggestions are made; one relates to removing 1/16 in. from the end of the projection on the gage, the other suggests that the standard gage may be used by applying a 1/8-in. liner under the surface that contacts the crest of the flange.

If experience with these two processes confirms the opinion of the committee that this is a reliable means for the selection of wheels for grinding, then the methods as outlined in Appendi. A should be inserted in the Wheel and Axle Manual.

Request has come from a member road that manufactures a portion of its own cast-iron wheels, asking if it would be acceptable to show the road's initials and place of manufacture as a means of identification for such wheels.

The committee sees no reason why such a procedure is not satisfactory so long as the abbreviations used would not be confused with any existing markings.

In the 1939 report there was submitted a statement regarding the determination of chill by instrumental methods. Further investigation along this line indicated that additional studies would have to be made before it would be consistent to make any definite recommendations.

Your committee has been advised by the Association of Manufacturers of Chilled Car Wheels that it has found the instrumental measurement of chill is not only practical, but is the most reliable means of determining this condition.

Identification of Single-Plate Bracketed-Type Wheels

To provide means for identifying single-plate bracketed-type cast iron wheels from single-plate wheels and in consideration of the advantage this identification marking may be in accumulating data as to the service record of the two types of wheels your committee has recommended to the Arbitration Committee that a symbol be provided for the identification of the single-plate bracketed-type wheel. The single-plate wheel is now identified by the symbol "SP."

The single-plate bracketed-type wheel could be identified by the symbol "SPB."

Specifications for Heat Treated Multiple-Wear Wrought Carbon-Steel Wheels

It has been brought to your committee's attention that Specification M-123-40—Sec. VI-Marking, Par. 12(a) mentions the AAR-MW marking preceding the other markings specified on the back face of the rim.

This arrangement is different from the way the marking paragraph is expressed for multiple-wear, two-wear and one-wear wrought-steel wheels where the A. A. R. and wheel-type identifications follow the other identification markings.

Since this difference in arrangement has resulted in a technical question being raised by some material inspectors, your committee has recommended an editorial change made in Specification M-123-40—Section VI-Marking, Par. 12(a) to conform with the similar paragraph in the other wrought-steel wheel specifications wherein the A. A. R. and wheel type identifications follow the other identification markings.

Influence of Contour Upon Service of One-Wear Wrought-Steel Wheels

Information has reached your committee that certain private car lines have been investigating the influence of tread contour upon the service of one-wear wrought-steel wheels. The contour change under observation is a deviation from the present standard of 1-in-20 straight taper in favor of the 1-in-20 taper with the

outside tread chamfered similar to the cast-iron wheel-tread contour.

Encouraging reports have been current with respect to these observations and your committee is endeavoring to secure direct information regarding this contour influence. It is the hope during the coming year to collect more substantial data along this line for presentation in its 1942 report.

Wrought-Steel Wheels for Axles with Enlarged Wheel Seats

The committee's 1940 report included two Tables, A-1 and A-2, as recommended by the Technical Board of the Wrought Steel Wheel Industry, giving the general dimensions of wrought-steel wheels for use on A. A. R. axles with enlarged wheel seats.

The Committee on Locomotive Construction has made certain revisions in Table A-2 covering wheels for Diesel-electric locomotives and are presenting it for adoption as standard practice in their report for 1941. Your committee concurs in this recommendation.

In the case of Table A-1 showing multiple-wear wrought-steel wheels for freight cars, passenger cars and locomotive tenders, the point has been raised that the table as presented in last year's report does not take care of wheels with rims thicker than the nominal 2½ in. as shown. For this reason Table A-1 has been revised to take care of this factor. It has also been amplified to include all tolerances.

There is an opportunity to restore for further service one-wear wrought-steel wheels removed for slid flat, built-up tread, out-of-roundness or similar conditions by either grinding or machining.

On one-wear wrought-steel wheels, especially those manufactured since 1935, with increased flange thickness, when removed on account of worn condition of the flange may be restored to further service with a minimum loss of service metal if the wheels are machined to the multiple-wear contour instead of attempting to maintain the one-wear wrought-steel wheel contour. Wheels so machined are suitable for service without further disturbance if the spacing back to back of rim is not less than the prescribed limit of 53 in.

Your committee has a sub-committee studying this proposition jointly with a sub-committee of the Arbitration Committee, which joint committee is taking into consideration the physical limits and interchange accounting. The joint committee is not in a position at the time of the preparation of the report to make recommendations, but this subject will be continued on docket with the purpose of having this proposition satisfactorily worked out for inclusion in the 1942 report.

Summary of Recommendations—1941

To Be Considered by Arbitration Committee

1—Provide a symbol for identifying in interchange, single-plate bracketed-type wheels.

2—Revise section (i) of Rule 98 by the addition as recommended in the report.

Revisions in Wheel and Axle Manual

1—Revision of Par. 323 relating to the identification marking for ground cast-iron wheels.

2—Revision of Par. 162 relating to matching wheels to within a variation of 1 in. in diameter in the same truck.

3—Revision of Par. 124 relating to the spacing of rails for wheel storage tracks.

4—Revision of Par. 35 relating to thermal cracks in wrought-steel wheels. It is recommended that a definite code of rules to govern Wheel Shop Practices be submitted to letter ballot and adopted as standard and this code of rules be enforced through interchange rule agreement.

5—It is recommended that the notes under wrought-steel wheel defect symbols be revised as recommended in the report.

The report was signed by H. W. Coddington (chairman), research and test engineer, N. & W.; D. Wood (vice-chairman), engineer of tests, Sou. Pac.; E. E. Chapman, mechanical assistant, A. T. & S. F.; W. R. Hedeman, engineer of tests, B. & O.; J. Matthes, chief car inspector, Wabash; A. M. Johnsen, engineer of tests, Pullman Company; E. C. Hardy, assistant engineer, N. Y. C.; A. G. Hoppe, assistant mechanical engineer, C. M. St. P. & P.; H. H. Haupt, general superintendent motive power, Central region, Pennsylvania; and C. B. Bryant, engineer of tests, Southern.

At the request of the presiding officer, F. H. Hardin, president, Association of Manufacturers of Chilled Car Wheels, commented on the possibility of saving some metal by using the cored-hub wheel when metal is scarce and suggested that this type of wheel saves about 25 lb. of useless metal which retards cooling; the new construction gives a better mechanical job; the wheels can be shaken out of the mold more quickly, and that stresses are better distributed. He referred to the shortage of scrap wheels for melting stock and said that the only other substitute, pig-iron, is not entirely desirable, besides being somewhat difficult to secure at the present time. In addition to ordinary wheel replacement, the great amount of new car equipment in prospect is crating a heavy demand for chilled-iron wheels and it is important, from the point of view of the railroads and wheel manufacturers alike, to return as many scrap chilled-iron wheels as possible for remelting and casting into new wheels.

Supplementing his previous comments, C. T. Ripley, chief engineer, Technical Board, Wrought Steel Wheel Industry, said that the use of modern gages and close tolerances is very necessary in the wheel shop, but raised the question how railway wheel-shop forces are to do this kind of work with the old and worn-out machine equipment still so generally found in many shops. Mr. Ripley paid tribute to the class of men who now work in railway wheel shops but are handicapped by antiquated machinery often in poor mechanical condition. He appreciated the difficulty of getting new replacement machinery for railway wheel shops at the present time, but indicated that much can be done to place present equipment in better operating condition. He suggested requiring wheel shop supervisors themselves to produce the accuracy of fits and the close tolerances with worn machine tools which they are asking their machine operators to obtain.

The report was accepted and submitted to letter ballot.

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Alabama State Rail Terminal and Docks at Mobile

Freight Agents Meet In St. Louis

Topics of immediate and current interest to the men on the firing line are discussed

WITH more than 500 members in attendance, the annual session of the Freight Station section, A. A. R., was held at the Hotel Statler, St. Louis, Mo., on June 17-18-19, with O. Maxey, superintendent station service, Chicago, Rock Island & Pacific as chairman. Addresses were delivered by Col. F. W. Green, chief operating officer, St. Louis Southwestern; P. F. Watson, Jr., president, Terminal Railroad Association of St. Louis; W. C. Dendall, chairman, Car Service division, A. A. R., and P. F. Buckle, superintendent of safety, Chicago, Burlington & Quincy, who is chairman, Safety section, A. A. R. As usual, the session was marked by excellent committee reports.

Watson and Green Speak

In welcoming the agents to St. Louis, Mr. Watson outlined the past, present and future of that city. Speaking of current problems, he said:

"What greater challenge could any group ask for than the opportunity now presented the American railroads—that of promptly, safely, and cheaply transporting the bulk of the nation's products—those produced on the farms, those cut in the forests, those mined and brought to the surface, and those manufactured and fabricated in our great industrial plants, as well as those transferred from other modes of transportation to the rails—at a time when the very existence of our whole scheme of living and government is very greatly dependent on efficient and dependable transportation. The Freight Station section, comprised as it is of a membership whose daily duties are of the greatest importance in seeing to it that the many details incident to and necessary for the satisfactory handling of this great volume of traffic, occupies no small assignment in this great drama of movement."

Col. Green said:

"Thirty or more years ago, when rail transportation was a monopoly, the railroad agent was quite generally looked upon as a big man in his community. The railroad for which he worked was measured in terms of public appreciation by the character of its agent. If he was competent and considerate in the performance of his duties, the railroad was looked upon as a valuable community asset. While today rail transportation no longer enjoys a monopoly, the opportunity for the agent to function as an ambassador of good will in the community in which he serves, presents a greater challenge to his leadership than ever before. When it is realized that the railroads today move only about 65 per cent of the total freight traffic, highway 8 per cent, Great Lakes 13 per cent, other inland waterways 3 per cent, and pipe lines about 11 per cent, and that of all passenger travel about 90 per cent is by private automobiles, 5 per cent on railways, about 4½ per cent on buses, and one-half of one per cent in airplanes, the freight agents and

the rail carriers are faced with a problem of the first magnitude. The freight agent in the midst of this competitive confusion must not only strive to develop the patience of Job, the strength of Samson, and the wisdom of Solomon, but also those qualities of enthusiasm, tact, and resourcefulness which have contributed so much to the success of our more youthful competitors, and, last but not least, a never-say-die spirit. Admittedly, this is a big order, but I am sure that once the need for it is recognized the men here today are big enough to fill it.

"Since World War No. 2 broke out in Europe about two years ago, a substantial acceleration in industrial activity and traffic has occurred in the United States, caused by the demand for materials and munitions for use in Europe. About a year ago, our preparedness program was launched. As our defense program develops, it is expected that the present trend in increasing traffic volume will continue until it gets into full stride, probably during the second or third quarter of 1942. From then on and until the World War is over, the strain upon our transportation facilities will probably be greater than at any time since World War No. 1. Studies by the Bureau of Railway Economics indicate that about 3,426,000 more carloads of freight traffic will be moved in 1941 than were moved in 1940. This is equivalent to an increase of somewhat less than 10 per cent over 1940. Preliminary estimates show that carloadings for 1941 will probably be in excess of 40,000,000. If they should reach 41,000,000, the increase over 1940 would be in the neighborhood of 12½ per cent.

"Addressing the members of the Great Lakes Regional Advisory Board on March 26, 1941, Captain E. C. R. Lasher, who has charge of transportation for the quartermaster general, closed with a statement which I cannot improve upon:

'Let me leave you, as shippers, with a word of caution. Do not become hysterical about this job. It is big—but approach it calmly. There is need for speed, but remember everything cannot be shipped at the same time—let the priorities of production take care of that. There are many things to be done, but keep your actions orderly, and, above all, let everyone bend his every effort toward keeping transportation under control. Bear these things in mind, heed them, and we will move anything, anytime, anywhere!'"

Other Addresses

Mr. Kendall spoke on the manner in which local agents can assist in car handling. In a practical manner he outlined ways and means whereby agents can save car days, both in regard to their relations with shippers in car handling and in operations in and around stations. He gave a brief summary of what the agents may expect to be called upon to do in car handling in the future, with suggestions as to how the agent may accomplish his work in this direction speedily and efficiently.

The section then passed unanimously a resolution to co-operate, as individuals and as freight agents, with the national defense program.

Mr. Buckle gave the agents several practical tips as to the promotion of greater station safety. He stressed particularly the necessity at the present time, for education in the safe handling of explosives.

"In the last World War," he said, "an average of 55,000 cars containing high explosives were on the rails of the American railroads every day and movement of this was made without a single serious casualty. When our present defense program is thrown into high gear, we shall probably handle a greater volume of high explosives than we did then. How well do you know the Bureau of Explosives inspector who serves your territory? You should know him; so find out who he is, become acquainted with him and how he may serve you, for he is your friend. Do you have on file the Bureau's regulations as contained in Topping's Tariff No. 4 issued January 6, 1941? Do your men have Bureau of Explosives Pamphlets 20-A, B, C, D and E? Do you and your men know the regulations and are you complying with them? I urge you to check on these matters and promptly. The safe handling of explosives and other dangerous articles was never more important than it is today."

The committee on loss and damage, of which M. G. Carson, joint agent, C. C. C. & St. L.-C. & O. was chairman, reported on reconditioning salvage for sale, correcting errors in L. C. L. loading and handling export shipments to Canada. The report stated that many agencies are not realizing the maximum amounts out of the sale of salvage, since it is generally sold in the same condition as when it was refused by consignees, at 50 per cent or less of the invoice price. By reconditioning such freight at small cost, 75 per cent or more can frequently be obtained. In dealing with export freight to Canada, the report outlined in detail the special measures that must be taken in clearing the customs and how to prepare the the necessary papers.

The committee on station and terminal operation, of which J. P. Moews, agent, Illinois Central, was chairman, reported on placarding tank cars; the use of conveyors in handling freight; canvas containers for L. C. L. perishables; the use of body ice for protection of merchandise; and the regular revision of marked tare weight of cars. The installation of conveyors in the C. M. St. P. & P. freight station in Minneapolis was described in detail. Detailed reports of the successful use of canvas containers were given, and, in this particular case, such containers are 2 ft. by 2 ft. by 3 ft., with a capacity of 12 cu. ft. They are insulated with hair, riveted, and equipped with an inside canvas flap to separate the dry ice from the commodity. The average weight of these containers is 26 lb. As to the use of body rather than bunker ice, the report cited the successful operation of meat racks in the end of cars, with a 9 by 12 curtain as a separation. Between 200 and 400 lb. of ice is placed under the rack and this has been found sufficient to protect perishables in overnight runs.

The committee on station traffic, of which G. R. Littell, terminal agent, Baltimore & Ohio, was chairman reported on pick-up and delivery, lighterage and the solicitation of L. C. L. freight. The Denver freight agents' association, in this report, commended the Railway Express Agency pick-up and delivery service at Denver very highly. Full details as to the equipment and operation of the lighterage fleet in New York harbor were given. The combined fleet of the railways there consists of 145 tugs, 30 steam lighters, 232 open lighters, 630 barges, 37 grain boats, 102 scows and 323 car floats, or 1,499 floating units.

The committee on station office operation, of which W. C. Leitner, agent, C. R. I. & P. was chairman, reported on a wide variety of station paper work. This included details on a simplified form of making settlement of pick-up and delivery drayage allowance; providing space on bills of lading for the purpose of showing stop to finish loading or partial unloading; what car records are necessary to enter in car record books at junction stations where the interchange is heavy; uniform passing blanks; phases of interline accounting; and stop-in-transit waybills. A further special report on closed car loading rules was presented by a committee of which J. L. Webb, general superintendent stations and transfers, Pennsylvania, was chairman.

No Reason for Pessimism!

Executives of shippers and railways at Chicago meeting find coming transportation problems difficult but not impossible

A NOTE of sober optimism, based on the facts of the transportation situation rather than on wishful thinking, characterized a special interim meeting of the National Association of Shippers Advisory Boards held at the Palmer House in Chicago on June 19. There was no attempt to minimize the situation. Immediate, pressing problems, such as the wheat movement, the petroleum transportation situation, port traffic and the diversion to all-rail movement made necessary by the drastic reductions in ships in coastwise and intercoastal service were all given a thorough airing. Some of the problems involved are gigantic in scope, requiring the utmost in co-operation between the shippers and the railways, but such co-operation exists and is increasing and nowhere could be found any cause for alarm. As a matter of fact, the artful suggestion inserted by Commissioner Joseph B. Eastman that the shippers relieve the railways of some of their burdens by shipping by truck received no visible support from the railway men present, who maintained that they were still looking for business and not relief—certainly not that kind of relief, in any event.

The meeting passed the following resolution of confidence in the railways to do the job that is before them:

"Be it resolved by the National Association of Shippers Advisory Boards that it has full confidence in the ability of the railroads in the United States to perform, under private management, with the co-operation of the shipping public, the transportation services to be required of them by the national defense program."

The State of the Nation

In addition to the addresses summarized later, the meeting was featured by analyses of sectional conditions by the chairmen of each of the 13 regional advisory boards, supplemented by the reports of the railway contact committee chairmen. A highlight of this symposium was the statement of J. J. Mahoney, general superintendent transportation, A. T. & S. F., regarding the grain movement. He stated that, in anticipation of moving the crop, 10 western railways now have 32,919 more western ownership cars on hand than they had as of May 1, 1941. "The carriers in the winter wheat belt," he said, "are prepared to furnish transportation for all grain that can be loaded and released promptly, and we in the winter wheat belt of the southwest are confident that we can do that with the available car supply, notwithstanding the fact that the Commodity Credit Corporation is now moving 40 million bushels out of the winter wheat belt to make storage space available for the oncoming crop."

The boards reporting on the prospective carloadings had the following to say:

Atlantic States: "Our commodity committees have worked out a forecast of 10.2 per cent increase for the third quarter and, with some commodities missing, 11 per cent for the fourth quarter. If certain expected things develop as to the movement of coal and coke, this will be increased to 12.3 per cent for the third quarter and 13 per cent for the fourth quarter.

Southwest: During the third quarter of 1940, actual carloadings in the Southwest were 345,700 cars and we estimate a 15.1 per cent increase in 1941. The grain crop is estimated at 30 per cent greater than last year, or 10,337 additional cars, while an increase of 60 per cent in the movement of sand, stone and gravel adds 16,270 cars. We expect a movement of 398,033 cars —an increase of 52,333 cars over the third quarter of 1940.

Central West: For the third quarter of 1941, the increase is estimated at 11 per cent; for the fourth quarter, 8.7 per cent.

Great Lakes: The forecast for the third quarter in 1941 is 636,692 cars, and for the fourth quarter, 579,741 cars, the latter being 66,000 more cars than were loaded in the fourth quarter of 1929.

Southeast: In the third quarter of 1941 this district will load 680,717 freight cars, an increase of 71,663 cars or 11.7 per cent over last year. For the fourth quarter, carloadings will be 838,986 cars, 104,922 more than last year, an increase of 14.2 per cent.

Mid-West: For the third quarter, 975,600 cars will be loaded in this district as compared with 859,806 cars last year, an increase of 13.5 per cent. This estimate is conservative.

New England: During the first five months of this year inbound loads increased 32.8 per cent over 1940. Outbound loads were up 17.1 per cent and it is our opinion that this ratio of increase will continue in the third quarter of 1941.

Northwest: We estimate an increase in carloadings of 12.4 per cent in the third quarter of 1941, as compared with the same period of 1940.

Ohio Valley: The forecast for the third quarter of 1941 is for an increase of 25 per cent in carloading compared with 1940, while the increase for the fourth quarter will be 35 per cent.

Pacific Coast: Our forecast shows an increase of 18.7 per cent for the third quarter, 1941, or a loading of about 50,000 cars. This does not include a large traffic expected from the Dutch East Indies to Pacific ports for rail haul to interior ports, which cannot yet be estimated.

Pacific Northwest: The anticipated carloadings for the six-month period beginning July 1 is 486,009 cars, as compared with 421,797 cars in 1940; an increase of 64,212 cars, or 15.2 per cent.

In his address, President Alvin W. Vogtle said that the reason for the special meeting was "to further the national defense program by surveying the transportation needs for the last half of the year and to give further impetus to co-operative means of meeting the rapidly increasing transportation demands for that period and for the future. The probability of our nation's victory or its defeat depends above everything else on adequate transportation, because this is a battle of industrial giants, a war of production; and all production depends upon transportation. We can contribute, as no other organization can, to that singleness of purpose now an absolute requisite for efficient utilization to the Nth degree of the transportation plant. This is our responsibility."

Secretary Carl Giessow reported on the activities of the association and its member boards, particularly with reference to a questionnaire on ways and means of improving transportation service that was sent to 200 trade organizations, chambers of commerce, individual large shippers and railroads. This information is now being studied in detail by officers of the association.

Saving Car Days

An address by Ralph Budd, president, C. B. & Q., and transportation adviser to the committee on national defense, was read by C. H. Buford, vice-president, A. A. R. It is summarized as follows:

"The Regional Advisory Boards, made up as they are of representatives of the shippers and the railways, ex-

emplify team work at its best, for they are the means of translating into reality the idea of co-operation between the carriers and their patrons. The role of users, as well as that of suppliers of transportation is one that challenges their resourcefulness in co-operating to make the existing transportation facilities produce the maximum of car miles and ton miles. The average movement of active freight cars is 42.6 miles a day, and the average time of movement is about 2½ hours in each 24 hours. If this 2½ hours could be raised to 3 hours movement, the ½ hour increase would be 20 per cent. Stated differently, one hour is less than 5 per cent of the 21½ hours dead time, but one hour is about 40 per cent of the moving time. Accordingly, 5 per cent decrease in the hours during which the car is not in transit would permit 40 per cent more time in movement. Of course, not all the dead time is chargeable to shippers; there are switching, terminal, road, and other delays with the carriers. Freight trains are now handled at such high speeds that it is not easy to secure much more car days or service by faster schedules; however, increasing the time available for movement of cars will contribute largely to their capacity for carrying freight.

There are a great many materials which are vital to the defense effort, and some which although not used in very great quantities measured by tons, are critical because of the limited production, because of remote sources of supply, or because of the serious effect their curtailment would have upon civilian life. Two vital materials which are extremely useful, both in defense and non-defense activities, are iron ore and coal. Because of its geographical location, about 85 per cent of the iron ore used in this country moves on the Great Lakes during the season of navigation, which is generally the equivalent of seven months of the year. In order to carry on for the other five months, the supply of iron ore must be brought down in advance to the lower lake ports and the Chicago district and stock-piled. In some respects, the ore movement is the largest task of transportation under way at this season of the year, and the most crucial. Without the necessary iron ore, steel production of course would have to be curtailed.

The 1940 season of navigation was forced to a sudden closing by the severe storm and low temperatures of last November 11. Notwithstanding this circumstance which reduced the season's shipments by perhaps 2,000,000 tons, sufficient ore had been brought down last year so that the stocks on hand at the low point this year, about May 1, were 16,237,000 tons, compared with 18,106,000 tons at the low point of 1940. Good fortune attended the opening of navigation this season, and with the aid of ice breakers the movement of iron ore was in full swing by April 20. The last figures available are for the week ended June 14 and they show that 22,302,538 tons of ore have been brought down the lake in the 1941 season, compared with 11,827,350 tons to the same date last year, an increase of 10,475,188 tons. Since last year's total for the season was 63,353,000 tons, if the same quantity is brought down for the remainder of this season that was brought down last year after June 14, the total for 1941 will be 73,828,000 tons.

Most available estimates indicate that bituminous coal production will be approximately 500 million tons during 1941. In the first three months 134,000,000 tons were shipped which is at the rate of 536,000,000 tons in a year, but the cessation of mining during April and the early part of May resulted in probably as much as 40 million tons of coal not being mined at that time, while the railway cars and locomotives for hauling it were standing idle. That means a heavier movement for the balance of the year than would have been necessary otherwise.

The petroleum industry has grown very rapidly during the last 20 years and it has set some precedents, among which is the providing of practically all of the means for transporting its products, in the way of tankers, both coastwise and on the Great Lakes; barges, especially on the Ohio and Mississippi rivers; pipe lines, of which there exist more than 100,000 miles; tank cars which operate on railroad tracks, and motor trucks on the highways. Some of the movement, especially that by tanker, has been at almost unbelievably low cost per ton mile compared with rail or highway transportation, and according to competent testimony, tanker costs have been only a fraction of pipe line costs. It therefore is a matter of great importance that a number of tankers have been withdrawn from Gulf-Atlantic coastwise service. The readjustments which are necessary and are being made, consist largely of reverting to the less economical means of transportation, some of which, like tank cars on railroad tracks, had been forced out of service by the cheaper water routes. The course which is being followed in solving the problem is the rather obvious one of finding ways and means of increasing the amounts of oil carried in pipe lines, and putting back into service the idle tank cars, also using all tank cars more intensively. Even though pipe lines and tank cars are not as economical as tankers, clearly the thing to do is to utilize them to the fullest extent possible. When that has been done, and when some new pipe lines and some new tankers which are now under construction go into service, the stress should be relieved. Of the 150,000 tank cars in the United States, only 9,000 are owned by the railroads, and these are used for company supplies. About 130,000 are owned by oil companies, or private car companies and leased to oil companies. I have asked the owners and lessees of all such tank cars to arrange for a co-operative agency to supervise the movements of those cars for the purpose of securing quicker routing, and the railways will provide expedited schedules for handling leads and prompt return of empties.

The year 1941 is nearly half over, but the period of heaviest carloadings is yet to come. It may be that the high loadings of coal and ore, and building up of inventories, are causing such high totals in the summer months that the percentage of increase during the normal fall peak will be substantially less than it would be otherwise. The heavier traffic has encouraged the making of extensive railroad improvements. In the two-year period June 1, 1939, to June 1, 1941, 115,000 new freight cars, 600 new passenger cars, and 850 new locomotives have been placed in service. The total cost of these and other improvements was $825,000,000. During the same period the total number of trucks in the country has increased from 4,225,000 to 4,650,000, and private automobiles from 25,261,000 to 27,300,000, while 5,800 miles of pipe lines have been added. The capacity of the entire transportation plant has been growing quite rapidly since the middle of 1939, and especially during the past 12 months. At the end of this year there will be 5,000,000 trucks on the highways. That is more than ever before, and it is estimated that there will also be 27,500,000 private automobiles on the highways.

It is ever the case that railways enlarge and improve their facilities, including the building of cars and locomotives, whenever the volume of traffic increases, or when prospective traffic justifies such action. The immediate past, as well as the present, are no exceptions. About a year ago a program was undertaken which involved the increasing of railroad freight car ownership to 1,700,000 and reducing the number of bad order cars to 6 per cent or less. Unless a shortage of steel for car building prevents it, this goal will be attained by October

1, 1941, which, as you also know, is the accepted date for being ready to handle the year's peak of business. Unless car building is curtailed due to shortage of material, there will be on hand at that time 1,700,000 railroad-owned freight cars, and only 5 per cent of them will be in bad order, which will mean 1,615,000 serviceable freight cars of railroad ownership, in addition to 275,000 privately-owned freight cars. A little over a month ago it was decided that the number of freight cars, exclusive of the 275,000 privately-owned cars, should be increased to 1,800,000 by October, 1942.

The most ardent desire on the part of users of transportation to co-operate in securing maximum capacity will not bring results unless a definite program is outlined. In listing here the thoughts that occur to me in this connection, I have no idea that I am making any new suggestions, but stating them again may serve to focus attention on some features which might be overlooked:

1. Load cars to the load limit capacity or the visible capacity as the case may be.
2. Unload cars promptly on arrival and without fail notify the railroad when empty car is available.
3. Give advance notice of requirements but do not order cars placed for loading until commodities are ready to move.
4. Remove all dunnage, blocking and rubbish from cars after unloading to permit immediate re-use and eliminate necessity of delay to cars for reconditioning.
5. Prevent damage to high class cars, and consequent lost car days, by avoiding loading with contaminating commodities.
6. Discontinue requests upon the railroads for special switching service, accommodating your operations to the regularly scheduled switching service.
7. Curtail requests for tracing of shipments or for empty car movements where private cars are involved.
8. Avoid ordering cars in excess of actual requirements.
9. Co-operate by using without rejection cars furnished for your loading if such cars have been approved by railroad car inspectors for loading of the commodity to be shipped.
10. In industries where 5-day work weeks are in effect some plan should be worked out to provide at least six-day basis for loading and unloading cars.

The important thing in use of transportation as in any other part of your plant facility, is the establishment of daily supervision which will insure carrying out of practices deemed desirable or economical. No substantial good will derive from a mere acquiescence in any plan—it must be activated.

Those who are charged with carrying it out must be well informed of what is needed and why, and cautioned against any relaxation of effort needed to bring about desired performance. I cannot emphasize too strongly the need for daily supervision of your transportation operations, and I hope that all shippers and receivers will vigorously follow this question with their shipping clerks, loading and unloading forces, and all others involved.

This National Association of Shippers Advisory Boards is a splendid example of the American genius for self-organization to meet common problems and to submerge competitive and personal interests of both carriers and shippers for the general good. Those Boards, always important, now have become even more so in the light of the transportation necessities for the national defense.

Labor Problems

The vital importance to the shippers of the present demands of railway labor for staggering pay increases was described by Samuel O. Dunn, editor, *Railway Age*. He described in detail the various steps taken by both the five operating brotherhoods and the 14 non-operating unions to force the railways to grant a pay increase, and continued:

"How much would this cost? The 30 per cent increase asked by the engineers, firemen, conductors, brakemen and switchmen would cost the railroads of the United States $190,000,000 a year. The average increase of 47 per cent demanded by the non-operating unions would cost $580,000,000 a year. So the wage increase demanded would amount to $77,000,000 a year or a 41 per cent increase in the payroll.

"You have to also consider the fact that the railroads pay a tax upon their payrolls to provide a retirement fund to pension their employees and they would have to pay a payroll tax upon the increase in their payrolls. The cost included in the payroll tax, in addition to the wage increase, is estimated at $130,000,000. The total demands would increase railroad operating expenses and taxes $900,000,000 a year.

"The last advance in railroad wages was made in 1937. The average weekly earnings, under the present wage rate, for all employees is 15 per cent greater than in 1929. Therefore a 41 per cent average increase would make the wages 62 per cent greater than in 1929. The cost of living is still less by 16 per cent than it was in 1929. You are interested in what the effect of this would be upon the cost of transportation. If it were all added in advance to rates you know what it would be. If it were not added in rates sufficiently to offset the increases then you are presented with another problem because the facts of history show that the ability of the railroads to buy equipment and materials is determined by the amount of net earnings that they make. These demands present a question with regard to the effect they might have upon the ability of the carriers to pay for equipment and materials which we all recognize are needed to enable them to render the service. These demands amount to $900,000,000 a year and exceed by $700,000,000 the amount the railroads had left in 1940 after paying operating taxes and fixed charges."

Getting Co-operation

C. H. Buford, vice-president, A. A. R., outlined the causes that have created the present transportation problem and ways and means whereby shippers and railways might co-operate to their mutual benefit. He continued:

"From September 1, 1939, to the end of 1940, the railroads added to their serviceable equipment supply through purchase, rebuilding and repairs, 5,934,000 net tons of car capacity. Present plans contemplate 2,457,000 net tons to be added this year. This will mean 8,391,000 net tons of car capacity added to the equipment supply in 28 months. Locomotives are being purchased and repaired to keep up with the car program.

"The individual railroads are doing all they can to provide more cars and locomotives for the fall business. When the peak comes, we will have a certain number of serviceable cars and we will have a certain loading each week. Our co-operative job is to move the business with the available cars. The performance will be actual and not theoretical.

"Let us assume that there is an increase in business—an increase so large that we will have to do a better job than we have ever done before. Some people have made this assumption and are convinced that a better job cannot be done. Based on many years' experience in handling cars myself and knowing generally how others handle them, I say emphatically that a better job can be done and it will be done if there is need for it. Don't let anyone mislead you on that point.

"Some have suggested that various types of penalties

might be adopted to increase the transportation use of freight cars. The most frequent suggestions are a reduction in the free time allowed for loading and unloading, elimination of credits for Sundays and holidays and cancellation of average agreements. I have not heard a single railroad officer recommend any of these things, and the officers of the Association of American Railroads are opposed to such a plan. The reason for our opposition is that we think the necessary results can be obtained through shipper co-operation. As we have done in the past, I see no objection to discussing these rules from time to time as conditions change; but I think a little more work on the part of shippers and railroads to increase the effective use of cars will justify our belief that no changes are necessary or desirable at this time.

"Have we had the larger part of our transportation experience during a period of car surplus? Have those of us who have had longer experience become soft and indifferent, or have we the will and determination to do a better job? We might just as well consider this, because the answers will be apparent to everyone if there is need for a more expert use of these tools.

"On the railroad side, the executives have said there would be no shortage in transportation to meet the needs of commerce and defense. The chief operating officers have said they would devote a sufficient amount of their personal time to the job of proper use of cars and locomotives to see that it is done. They are finding evidence of bad habits formed during this period of surplus and are correcting them.

"Suggestions have been made to increase the effective use of cars by the Office for Production Management; some from other government agencies, and many from the Car Service division of the Association of American Railroads. All these suggestions are good, and, if actually carried out, will give the full measure of shipper co-operation.

"I say again that no one knows how much business the railroads will have to handle. I have said before, and want to say to you again, that no one knows the capacity of our railroad plant for moving business. A little more business to be moved means a little more co-operation between shippers and railroads. A lot more business means a lot more co-operation. We have co-operated to the extent necessary to handle things in past years and I am confident we will do it in the future."

Mr. Eastman Discusses the Situation

Joseph B. Eastman, who headed a considerable delegation of Interstate Commerce Commission executives in attendance at the meeting, spoke as follows:

"During the World War it was learned that the important thing was to keep railroad cars in circulation; that their purpose is to move things and not to store things, and it is absolutely futile to let them start on their journey without knowing what is going to happen to them when they reach destination, and whether they can be released or are going to be held. It was learned also that in transportation the shipper as well as the carriers are of very great importance. It was also learned that in an emergency of that sort it is necessary to have some broad directing country-wide policy. It cannot be left solely to the individual railroads. This broad directing policy has got to be backed by real power.

"Having learned those lessons, immediately after the war three things were done, among others. One was to set up what is now known as the Car Service division of the Association of American Railroads. It was for the purpose of providing this broad directing policy, country-wide in extent. The second thing that was done was to constitute these shippers advisory boards all over the country, for the purpose of keeping in touch with transportation conditions, being able to forecast needs and able to assist in the efficient rendering of service.

"The third thing that was done, in the Transportation Act of 1920, was to make the Interstate Commerce Commission the repository of certain powers, emergency powers, which could be used to give power to this broad directing policy in the event of necessity and without requiring the taking over of the railroads by the government. The Shippers Advisory Boards have functioned since that time very effectively indeed. They have demonstrated their value time and time again, and I think as evidence of that fact we have the facts that there have been in the past 18 years or so no serious car shortages, if there have been any car shortages at all. The country is building up to an all-out effort for the national defense, which will strain transportation facilities of the country to the limit. Nobody knows how much they are going to be strained. All we can be sure about is that the transportation facilities of the country will be strained to the utmost before we are through.

"The railroads have done a splendid job so far. We have had no occasion whatsoever to exercise the emergency powers of the Commission, and we hope we won't have occasion to exercise it. The railroads have shown, in what they have done, what improvements have been made in railroading in the past several years. They are handling with less cars now, traffic as heavy as was handled in 1930, and it is mounting and drawing up to the 1929 level.

"Where can the shipper come in? He can come in principally in keeping cars in circulation; keeping them rolling; cut down the time in which they are standing and unloading and awaiting movement; to get the increased loading of these cars. He can cut down wasteful and unnecessary movements. All this is for the purpose of enabling cars to do more work, which means the same thing as adding, to that extent, a new supply of cars.

"Cars are being routed circuitously not only by the private shippers but by the Army and Navy as well. The important thing for the shippers of the country, including the Army and Navy, is to enable the cars to do the utmost possible work in moving commodities from place to place. That is what they were built for, and that means loading and unloading as quickly as possible, and routing cars over the quickest routes. I don't say the shortest routes, but the quickest routes, and listening to the siren voice of the solicitor only so far as it bears on that point and nothing else. I express what might be called a pious wish to labor, and that is that they will avoid unreasonable demands or at least avoid pressing unreasonable demands which will have the effect of obstructing the war defense effort and that they will be as long-headed and far-seeing as possible and that they will look ahead and foresee the probable results of what they propose upon public sentiment, so far as labor is concerned, and upon their own condition if a spiral of inflation should get underway and get out of control.

"If additions to transportation facilities prove necessary for national defense purposes which will have no normal future use for any other purpose, it seems to me that the government, and by that I mean the whole country, should bear the financial burden of such facilities and not the railroads alone."

The Ports Are Open

George C. Randall, manager of port traffic, A. A. R., reported the healthy situation at the ports, as follows:

"During May, 1941, a total of 55,452 cars of export freight and 20,735 cars of coastal freight, or 76,187 cars

of all freight, was handled as compared with 68,587 in 1940, an increase of 11 per cent. At New York, 928,455 tons of freight were lightered in May, as compared with 729,370 in May, 1940, and 417,994 in May, 1939—an increase of 27.3 per cent over 1940 and 122.2 per cent over 1939.

"As of June 15, the situation was very satisfactory at 11 ports, despite the increased movement. For example, at New York during the week ending June 14, 7,054 cars were unloaded for lighterage as compared with 5,250 in the corresponding week of 1940. There were 3,487 carloads of freight in covered storage at New York as compared with 3,323 on the same date last year. There were approximately 3,000 more carloads of freight in ground storage at New York than a year ago, but the ground storage even now is only partly occupied, there being room for some 6,000 more cars.

"Since June 1, several million bushels of last year's wheat crop have been moved from interior elevators to the ports for storage. Care is being taken in allocating space at the seaport for this wheat to see that sufficient room is left in the elevators to handle the volume of Canadian grain and local movements which are to be expected during the next few months.

"Currently, we are unloading between 2,000 and 2,500 cars of export and coastal freight daily at our ports. The total number of cars on hand at these ports has averaged, so far during June, approximately 12,000. In other words, there is less than six days' "bank" of freight at the ports for movement. Of the 12,000 cars on hand, less than 3 per cent.

"The present volume of freight being lightered at New York is approximately 85 per cent of the volume at the peak of the World War movement, and there is ample storage and pier capacity there for substantially increased movement. The situation at all other ports is easy. The capacity of none of them is being reached, and with the continued co-operation of shippers and steamship people, there would seem to be no reason why all the freight offered for movement by the railroads to and from the ports of this country cannot be satisfactorily handled."

George H. Shafer, general traffic manager, General Timber Service, Inc., gave a resume of the intercoastal and coastwise shipping situation. Conditions in the maritime shipping industry, because of ships being taken over by the government, seem to be chaotic and the railways may expect more and more sudden demands for all-rail service on traffic formerly moving wholly or partly by sea.

M. J. Gormley, executive assistant, A. A. R., expressed optimism as to the prospects, and cited details as to what a considerable list of shippers are doing to promote greater car efficiency. W. C. Kendall, chairman, Car Service division, A. A. R., briefly analyzed the reports from the 13 boards, and C. J. Goodyear, traffic manager, Philadelphia & Reading Coal & Iron Company, closed the meeting with an analysis of what the advisory boards, as contrasted with individual shippers, can do to aid in solving the transportation problem.

A Baggageman's Cargo Sometimes Grows By Leaps and Bounds. The baggageman on a Boston & Maine local from Boston to points on the Newburyport branch recently receipted at North Station for "one opossum in crate." Five miles out of town he had two opossums; several miles further, three; just before the train headed down the branch the count was mother and five. Like the station agent in Ellis Parker Butler's short story "Pig's Is Pigs," the baggageman was puzzled. Should he charge extra for the increment or only for the original lading. He was advised by the assistant superintendent that "children under five ride free."

Bridge Engineering Stands Out on Shasta Line Relocation

(*Continued from page 1150*)

tures was designed in accordance with the water cement ratio, to a strength of 3,000 lb. per sq. in. in 28 days. However, tests conducted throughout all pouring operations showed that, without exception, 3,500-lb. to 4,000-lb. concrete was secured. To obtain these results, specifications for the concrete used in the piers of the Pit River bridge required that the concrete must not leave the mixer at a temperature higher than 75 deg. F. Since this specification could not be met during the summer months with hot aggregates and river water with a temperature as high as 72 deg. F., mixing water, when necessary, was taken from the refrigerating plant mentioned previously in connection with the artificial cooling of the bases of Piers 2, 3 and 4.

Specifications for the concrete employed in the smaller piers of the other bridges on the line, as well as in all poured-in-place culverts, required that the temperature of the mixture leaving the mixer should not exceed 90 deg. F. Where this specification could not be met with the normal materials and water available, the temperature was lowered by using ice in the mixing water.

The relocated line of the Southern Pacific around the Shasta reservoir, including all tunnels and bridges, is being built by the Bureau of Reclamation under the direction of its chief engineer, S. O. Harper. In the field, railroad construction has been directed by Engineer R. M. Snell, under the supervision of Ralph Lowry, construction engineer for Shasta Dam, and W. R. Young, supervising engineer for the Central Valley project.

The preparation of designs, specifications and engineering work in the chief engineer's office in Denver, Colo., was directed by Senior Engineer W. E. Blomgren, under the supervision of K. B. Keener, senior engineer on dams. All bridge designs and plans were prepared by the Bureau's bridge engineer Robert Sailer, under the supervision of Senior Engineer H. R. McBirney, Canals division. All operations of the Bureau of Reclamation are under the general direction of John C. Page, commissioner, with headquarters in Washington, D. C. Engineering and construction work is under the supervision of S. O. Harper, chief engineer; W. R. Young, assistant chief engineer, and J. L. Savage, chief designing engineer.

The fabrication and erection of the First, Third and Fourth Crossing bridges of the Sacramento river, and the Salt Creek and Pit River bridges, were contracted to the American Bridge Company of Gary, Ind. The Sacramento River Second Crossing, Doney Creek and O'Brien Creek bridges were fabricated and erected by the Bethlehem Steel Company, Bethlehem, Pa. The Pit River bridge substructure and piers are being constructed under a contract awarded to the Union Paving Company of Oakland, Cal. All Bureau of Reclamation designs and specifications for the railroad relocation construction were subject to the approval of W. H. Kirkbride, chief engineer of the Southern Pacific, assisted by his staff, including Geo. W. Rear, bridge engineer, and W. A. Given, location division engineer.

Upon completion of construction, ownership of all of the bridges, except the Pit River bridge, will be transferred to the Southern Pacific. The United States retains title to the Pit River bridge, over which perpetual easements for use are granted to the railroad and the State Highway department. Under a contract with the Bureau, the railroad and highway department assume and divide the cost of maintenance.

Motor Transport Section

Truck-Trailer Combinations Are Used by the Affiliate of a Typical Eastern Carrier in Substitution for Short-Run Way Freights

The Railroads Put in More Highway Services in 1940

Presidents tell their stockholders of intensified activity in co-ordinated facilities

Part I—East and South

HOW fast the railroads of the country are transforming themselves into complete transportation machines is evidenced by statements of new and extended co-ordinated highway truck and bus services in annual reports for 1940. In spite of I. C. C.-imposed restrictions on new routes which, until several months ago, continued to give independent operators "a vested interest in obsolescence" in the railroad field, extension of over-the-road truck routes for merchandise continued apace. Substitution of buses for unprofitable passenger trains was effected, as far as was possible, in the face of state commissions' truckling to popular prejudice against losing their train service—which they often like to look at, but infrequently to patronize. Expanded pick-up and delivery services more than "paid their freight" in increased merchandise traffic for the rails, according to an impressive number of reports. Operating and financial statistics of highway affiliates show considerable improvement. What losses were incurred should in most cases be considered as off-setting far greater losses on train operation for which they have been substituted.

President E. W. Scheer of the Reading told stockholders that operating revenues of the Reading Transportation Company increased 7 per cent in 1940, as compared with 1939, and "resulted in a small profit." During the year 1,370,224 bus-miles were operated and 986,216 passengers transported, the latter representing an increase of 10 per cent over the previous year. Due to reduction in basic bus fares, effective March 25, 1940, however, revenues showed only a slight increase over 1939. Truck-miles operated during the year totaled 1,135,353 and 69,812 tons of freight were handled. Of the latter, 16,337 tons consisted of railroad freight transported in station-to-station trucks in train substitution service. A total of 990 carloads of freight in truck-rail-truck service produced a revenue of $47,483 for the railroad company, an increase of 17.5 per cent compared with 1939.

The report of the New York Central indicated that at the close of the year it continued to hold 90,000 shares of no-par common stock of Central Greyhound Lines, Inc., having a ledger value of of $136,022. The report of Judson Zimmer, trustee of the Fonda, Johnstown & Gloversville, showed that passenger revenues (virtually all of which are earned in urban and intercity bus operations) were $252,337 in 1940, a decrease of $4,131 under 1939. Bus routes operated during the year carried 2,451,078 passengers, and ran 1,073,016 bus-miles.

The statistical table of securities owned by the Pennsylvania as of December 1, 1940, indicated that the company continued to hold 17,282 shares of common and 1,500 shares of preferred stock of Pennsylvania Truck Lines, Inc., from which preferred stock it received an income of $9,000 during the year, an amount identical to that received in 1939.

President W. F. Cram of the Bangor & Aroostook reported that revenues from highway buses increased slightly during the year and that service in substitution for, and in co-ordination with, railroad passenger train service by the Bangor & Aroostook Transportation Company as agent for the railroad "resulted in substantial savings to the railroad company." President E. S. French of the Maine Central reported that total operating revenues of Maine Central Transportation Company for 1940 were $466,826 or 5.8 per cent over 1939. Net operating revenue was $54,509, an increase of 17.6 per cent over last year, but, due chiefly to accrual of federal income tax, the amount transferred to income of the railroad company was less than 1939, being $34,703 as compared with $38,850 paid in that year. A new bus line from Bingham, Me., to the Canadian border (via Jackman) was inaugurated on July 3, 1940. This route gives a through service to Quebec, Que., in connection with the Quebec Central bus line.

Trustee H. S. Palmer of the New York, New Haven & Hartford reported that operations of the New England Transportation Company resulted in net income of $178,003, a decrease of $3,741 under 1939. This net income includes depreciation charges of $129,149, note interest of $79,110 not paid to or included in the income account of the parent road; and a dividend of $52,070 received from New England Greyhound Lines (which took over certain long distance services of the New England Transportation Company in 1939). This dividend was $67,930 less than that received in 1939. Separate income accounts appeared for the several operating subsidiaries of the New Haven showing the Soundview Transportation Company (formerly a wholly-owned subsidiary of the defunct New York, Westchester & Boston all of which capital stock has been assigned to the trustees of the New Haven) with a net deficit of $3,497, an increase of $1,142 over the 1939 deficit. Operating expenses were 108 per cent of total operating revenues, as compared with 105 per cent of 1939.

The County Transportation Company, another wholly-owned bus subsidiary, reported a net income of $1,240, a decrease of $6,874 over the 1939 net. A separate income account for the New England Transportation Company showed, in addition to the net income reported above, that it took in combined revenues—including passenger, freight and other—of $2,763,188 in 1940 and reported operating expenses of $2,545,063. Operating revenues increased $24,270, as compared with the previous year, while operating expenses decreased $18,485. The New Haven continued to hold the entire capital stock of the company, having a par and book value of $1,500,000; notes in the amount of $1,318,500; and had made advances to date of $84,424.

Co-receivers L. R. Powell, Jr., and H. W. Anderson of the Seaboard Air Line reported that free pick-up-and-delivery service "continues to be an important part of the Seaboard service in competing with other methods of transportation for the class of traffic to which this service is adapted."

The Atlantic Coast Line report pointed out that the proposed truck service to improve the handling of less-carload freight between certain railroad stations in Virginia and North Carolina has not yet been inaugurated, pending approval of applications filed with public authorities.

President I. B. Tigrett of the Gulf, Mobile & Ohio, pointed out that in connection with the operation of new Diesel-powered passenger trains over the former Mobile & Ohio from the south to St. Louis, Mo., "the almost prohibitive expense of operating into the St. Louis terminal" has been eliminated and "a small but adequate passenger station has been constructed at East St. Louis, Ill.," from which patrons are transported across the river by bus and cab to convenient points in St. Louis. In addition to holding securities in the Gulf Transport Company, having a par value of $9,700 (identical with last year) the road's list of securities shows an investment in a new company called the Mobile & Ohio Transportation Company, having a par value of $8,000. The investment list of the Louisville & Nashville showed that it continues to hold the stock of the Gulf Transit Company (not related to the Gulf Transport Company above) having a book value of $82,300.

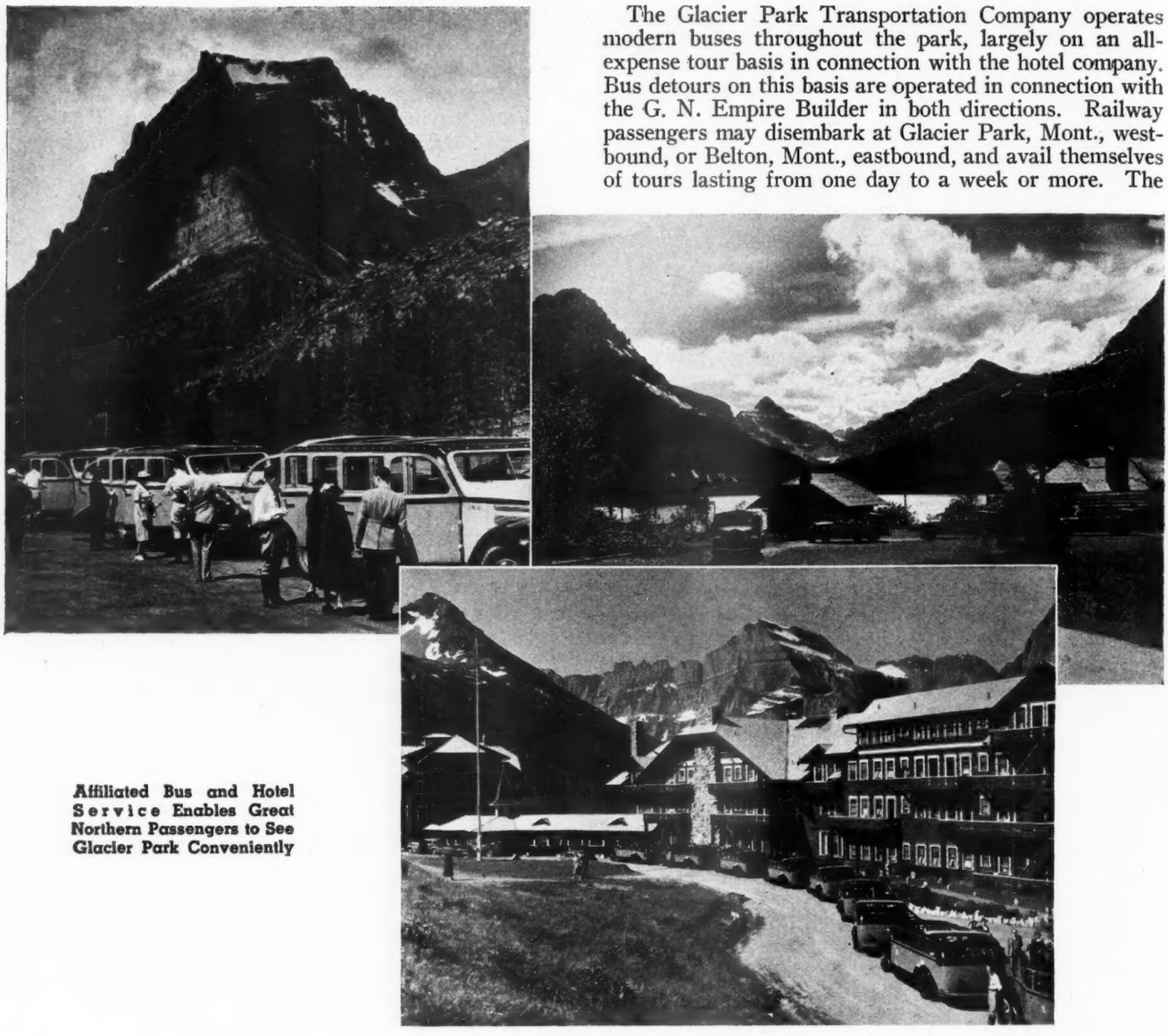
The Norfolk Southern Bus Corporation, wholly-owned subsidiary of the Norfolk Southern, operated 1,686,499 bus-miles in 1940, as compared with 1,565,124 in 1939; carried 919,786 passengers, as compared with 764,619; and earned gross revenues of $395,311, an increase of 20 per cent as compared with $327,179 for the previous year. Net income amounted to $28,009, as compared with $23,795 in 1939. In September, 1940, the corporation obtained temporary authority from the Interstate Commerce Commission to operate, under lease, truck lines of the Virginia-Carolina Transportation Company between Norfolk, Va., and New Bern, N. C., and between Plymouth, N. C., and Columbia, N. C., both paralleling railroad lines. Authority to purchase these lines has since been received and over 200 mi. of truck lines are now being operated by the affiliate.

[Part II of this article, presenting high-lights from motor transport discussions in reports of railroads in the West and Southwest will appear in the *Railway Age* for July 26.]

Co-Ordinated Service Opens Scenic Vistas

THE Great Northern is the only railway serving Glacier National Park, but apart from giving train service to the park, it also looks after the comfort, convenience and transportation of the passengers while they are in the park through its affiliates, the Glacier Park Hotel Company and the Glacier Park Transportation Company. The railway has also played a major

How the Co-Ordinated Service Makes Park Sightseeing Convenient



Affiliated Bus and Hotel Service Enables Great Northern Passengers to See Glacier Park Conveniently

The Glacier Park Transportation Company operates modern buses throughout the park, largely on an all-expense tour basis in connection with the hotel company. Bus detours on this basis are operated in connection with the G. N. Empire Builder in both directions. Railway passengers may disembark at Glacier Park, Mont., westbound, or Belton, Mont., eastbound, and avail themselves of tours lasting from one day to a week or more. The part in advertising and promoting the park as a tourist attraction.

The Glacier Park Hotels Company is represented at the park during the season by a resident general manager, who reports directly to C. O. Jenks, operating vice-president of the Great Northern. This man has charge of lodging guests at the many hotels, chalets and camps in the park, as well as the commissary for these places and for the bus and horseback trips through the park.

price range for these tours ranges from $17 all-expense to $54.50, the latter tour including 16 meals and 5 nights' lodging, about 250 miles of bus travel and several motor launch trips. The tours are shown on the accompanying map. The bus drivers on these routes are not only carefully selected, but are also thoroughly educated in Glacier Park lore. A 330-page driver's manual is supplied to each of them, and this gives, in readily available form, the answers to almost any question any tourist could ask regarding the park.

* * * *

Railway Trucking Subsidiaries Throughout the Country Are Aiding in National Defense — the Above Shows Southern Pacific Cars and Trucks at Fort Bliss, Texas

NEWS

Another Lighterage Case Lost by N. J.

I. C. C. dismisses complaint on New York harbor water-borne traffic

Passing upon another New Jersey complaint, the Interstate Commerce Commission has found that rates, charges, and terminal practices on import, export, intercoastal and coastwise traffic from and to points in New York Harbor are not unreasonable or otherwise unlawful, except as to extra towing charges which now apply to certain New Jersey points. At the same time the commission took occasion to remind the railroads again of "the greater economy which might be effected through consolidation or joint use of the lighterage facilities," adding that practices today are "substantially the same" as they were when the commission first commented on them as long ago as 1917 in the New York Harbor Case.

Chairman Eastman dissented. He thinks that undue preference of the New York side results from the absence of a separately-published plus charge for movements by lighter to and from ships docked there; and he further believes that greater progress will be made in the way more economical lighterage operations "once we concentrate our attention on this water service by requiring a separate charge to be published for it." The proceeding's title case is the state of New Jersey's complaint (No. 28204), but the report embraces also No. 28299, a similar complaint of Jersey City, N. J.

Among other observations the majority report expressed fears that changes sought by complainants "would go far toward restoring the chaotic situation" which existed prior to the so-called Cooley award, i. e., the port-differential set-up established by an 1882 arbitration commission of which Thomas M. Cooley was a member. Complainants suggested a plus charge of 6.5 cents per 100 lb., contending that lighterage service between the railhead and steamship "is unnecessary, uneconomical, wasteful, archaic, ancient, and outmoded, and should be discouraged." The intervening city of Boston suggested a charge of not less than three cents per 100 lb., and that is what Chairman Eastman would apply at the outset in order to allow time for adjustments before a full-cost charge is applied. In the latter connection, the majority noted complainants' recognition of the fact that direct transfer facilities on the New Jersey and Staten Island shores would be inadequate to handle all of the water-borne traffic presently moving through the port; and thus if they won the case "actual establishment of a plus charge would have to be deferred for a considerable period until such facilities could be made available." Also, the majority speculated on fourth-section difficulties which would arise as a result of the establishment of a plus charge.

Chairman Eastman was unimpressed. He compared the "conservative" estimate of $1.30 a ton for the additional cost of handling the traffic involved on the New York side with the rate of $1.56 for handling lake-cargo coal 172 miles from the Pittsburgh district to Lake Erie ports. An equalization of rates which disregards such a difference in costs looked like undue preference and prejudice to Mr. Eastman. And he called attention to the fact that separate lighterage charges already apply in the case of excepted commodities, l. c. l., and certain express traffic. Moreover, the Cooley award of 1882 was a "temporary arrangement only." In short, the chairman submitted that "there is no reason for believing that these port differentials have been sanctified by our past decisions." If they are, he asked, why was not the complaint dismissed at the outset.

The port of New York, Mr. Eastman said at another point, is "no under-dog"; and he finds it difficult "to become greatly concerned over the possibility that its traffic may be diverted to other ports." The chairman also chided the majority for its statement that disturbance of the present parity between the two sides of New York Harbor "would most likely precipitate a chaotic situation as between the North Atlantic ports similar to that which existed prior to 1882." He called that "a most surprising statement to emanate from this commission," adding: "Prior to 1887 there was no federal regulation of railroads. Now we have the power to fix both maximum and minimum reasonable rates as well as to correct unlawful discriminations. These powers were given us for the very purpose, among others, of preventing or curing such 'chaotic situations,' and in my judgment we are capable of using them effectively."

Williams Resigns as L. V. Chief; Will Stay Awhile

Although he formally resigned as president of the Lehigh Valley on June 25, Albert N. Williams will remain as directing head until his successor in office has been chosen. Mr. Williams was elected president of the Western Union Telegraph Company on June 17, as was reported in last week's *Railway Age*.

Ditch Opponents Get Under Way

St. Lawrence project is hit by Great Lakes interests; Jones suggests tolls

The opposition's case against the St. Lawrence power and seaway project got under way this week after the House rivers and harbors committee had spent a week listening to various high government officials extolling the alleged benefits to be derived from the venture. Tom J. McGrath, executive director of the National St. Lawrence Project Conference, was the lead-off witness for the opposition, and after hearing him outline the extent of the opposition's case and the array of witnesses from the various sections of the country, it appeared that the committee might have to extend the hearings considerably beyond the scheduled one week for each side.

At the same time Chairman Mansfield introduced in the House a resolution which would give the committee the authority and the funds to visit the site of the project. Earlier in the week Mr. Mansfield announced that the committee would shortly make a trip to the territory involved for inspection purposes.

Mr. McGrath began his testimony on June 24 by explaining the membership of his organization and the scope of its testimony, saying that after witnesses from the most directly affected area, that on the Great Lakes, had been heard, witnesses would take the stand from New England, the Gulf Coast, the middle west, from organized labor and from specific industries such as the coal industry and the railroads.

He was immediately challenged by Representative Culkin, Republican of New York, who wanted to know who the contributors to the organization were and how much they had contributed. After much heated discussion, Chairman Mansfield ruled that a request for the contributors was not pertinent, although several members suggested that the financial backers of both sides might well be included in the request. Mr. Culkin also wanted to know what part the Association of American Railroads had taken in Mr. McGrath's organization. Mr. McGrath admitted that he had consulted some of the A. A. R. publicity men, but that the A. A. R. was only one of many members of the group.

Mr. McGrath's direct testimony was relatively short and concerned itself entirely

(*Continued on page 1199*)

No Explosives Deaths in 1940

Explosives bureau reports but one person injured; revised I. C. C. regulations

No person was killed and but one person was injured in the transportation of explosives of all kinds in Canada and the United States in 1940, according to the report of W. S. Topping, chief inspector, Bureau of Explosives, Association of American Railroads, for 1940. There were but three accidents during the year—two slight explosions in the handling of toy torpedoes (loss $10) and one explosion in a freight house of blasting caps and dynamite awaiting removal by consignee. Including all "other dangerous articles" under the jurisdiction of the Bureau there were 68 fires, two deaths and 74 persons injured during the year. There were also 43 cases when explosives were involved in what the Bureau calls "near accidents," of which 16 could definitely be charged against rough handling by the carriers, defective bracing at transfer stations or collisions. The remaining instances were charged to shippers' failure to properly load and brace explosives or to loading in damaged condition.

A comparative summary showing transportation losses chargeable to accidents involving explosives and other dangerous articles reveals that in 1940 a total of 818 accidents occurred, involving a property loss of $142,829. This compares with 865 accidents and a property loss of $115,304 for 1939 (final corrected figures). A table listing the particular cases of accidents indicates that derailment or collision continued to be the chief cause of loss, amounting to $80,008 out of the total of $142,829. Rough handling—which accounted for $22,851—was the second greatest cause of loss in 1940, as contrasted with improper loading or defective containers the previous year.

As of the close of the year the staff of the bureau was composed of 16 field work inspectors, which represents no increase over the previous year. Railroad membership of the bureau declined from 402 in 1939 to 391 in 1940, but affiliate members increased from 0 to 6. The report points out that regular inspections have dropped slightly recently because staff members must give close attention to cars of explosives for national defense, particularly at loading and unloading points. Many violations, "some of them quite serious," were observed and corrected immediately.

The section devoted to tank car activities points out that a great deal of work was done in connection with the car committees of the A. A. R., the Manufacturing Chemists' Association and the Compressed Gas Manufacturers' Association for the general revision of all specifications of tank cars. Specifications for fusion-welded construction, together with I. C. C. specifications for tank cars of riveted, forge-welded and seamless construction revised to date, will shortly be published in a pamphlet titled "Association of American Railroads, Operations and Maintenance Department, Mechanical Division, Specifications for Tank Cars, Standard." Such specifications will no longer be published by the Bureau of Explosives and may now be obtained only from the A. A. R., 59 East Van Buren Street, Chicago. During the past year the Tank Car committee has transmitted to the Bureau 385 applications for approval of designs, materials, and construction of new tank cars and of changes in existing cars. Reports received during 1940 show that the carriers were obliged to transfer the contents of 169 tank cars due to defects. A special table in the report indicates that hazards of bottom-discharge outlets of the spring-closure type common prior to 1927 has been still further reduced by the increase in the number of cars equipped with valves of the screw-closure type. Property loss from tank car leakage due to bottom outlet failure declined from a high of $348,185 in 1926 to $4,589 in 1940; the loss in 1939 was $10,153 (corrected figure).

Finally the report points out that W. S. Topping, as agent, has issued Tariff No. 4 containing all of the new regulations covering the transportation of explosives and other dangerous articles by railroad freight, express and baggage, together with shipping container specifications, which were approved by the I. C. C. on August 16, 1940, effective January 7, 1941. Agent Topping has also published Tariff No. 5 on behalf of common and contract motor carriers parties to prescribed regulations by the I. C. C. covering motor vehicles. The Department of Commerce, which has jurisdiction over water transportation of explosives and other dangerous articles, has issued revised regulations effective April 9, 1941. On behalf of such water carriers as are parties thereto the Bureau will publish Tariff No. 6.

To assist in the education and instruction of individual railroad employees in duties connected with the handling of explosives and other dangerous articles the Bureau has prepared pocket-size pamphlets containing condensed instructions for the following classes: 20-A, billing and rate clerks; 20-B, cashier, delivery and check clerks; 20-C, foremen and assistant foremen; 20-D, receiving clerks; 20-E, checkers, truckers and stowmen; 20-F, yardmasters, yard crews and yard clerks; 20-G, train and engine crews; 20-H, car foremen and car inspectors. These replace Bureau of Explosives pamphlet No. 8, a pocket-size edition containing regulations prescribed by the Commission.

Labor and Management Oppose Pipe Line Bill

Hearings on the Cole pipe line bill, H. R. 4816, which has passed the House, were held before a Senate interstate commerce subcommittee on June 23. Only opposition witnesses appeared, and the trend of their testimony followed that which they presented before the House interstate and foreign commerce committee, details of which were given in the *Railway Age* of April 5, page 621.

Witnesses appearing were W. L. Stanley, chief public relations officer of the Seaboard Air Line; and J. G. Luhrsen, executive secretary-treasurer of the Railway Labor Executives Association.

Ft. Worth Lease by C. & S. Denied

I. C. C.'s views on Harrington amendment are given for the first time

Some light for the first time was thrown on the question of how the Interstate Commerce Commission will regard railroad-sponsored unification and consolidation projects which involve a reduction of labor costs and their relationship to the Transportation Act of 1940's Harrington labor-protection amendment when the commission, in a six to four decision this week, denied authority to the Colorado & Southern to lease the properties of the Fort Worth & Denver City and the Wichita Valley.

While the majority held that "the amount of future savings is uncertain and problematical," due to the effect of the four-year job-protection clause of the Harrington amendment, Chairman Eastman wrote a strong dissent in which he declared that if this is a sound reason for disapproving the proposed transaction, it would be "an equally sound reason for disapproving any unification which contemplated the avoidance of waste." He was joined in his dissent by Commissioners Mahaffie and Miller, while Commissioner Porter noted a dissent and Commissioner Lee took no part in the consideration of the case.

Division 4 on July 31, 1940, had approved the lease of the Fort Worth road and the assumption by the C. & S. of a note of the Fort Worth for $8,176,000 now held by the Reconstruction Finance Corporation. This decision was handed down prior to the passage of the Harrington amendment. Upon the petitions of various Texas interests which had protested the merger of the management of the two roads, the full commission reopened the case and set it for reargument.

At a hearing in the case the C. & S. introduced exhibits to show that after the expiration of four years from the effective date of the order, it would save $307,942 annually, plus miscellaneous savings in stationery supplies, and office equipment, not readily ascertainable, and after October 31, 1946, about $20,000 annually in office rent at Fort Worth. The savings would be accomplished by the transfer of heavy locomotive repairs from the Childress, Tex., shops to the Chicago, Burlington & Quincy shops in Denver, and the transfer of heavy repairs to passenger cars from Childress, Tex., to the Burlington shops at Aurora, Ill.

The majority took the position that because of the passage of the Harrington amendment, "it is obvious that the savings would be insignificant during the period in which the employees would be protected by the provisions of our order. . . ." "In other words," continued the majority, "we are asked to give our approval to this transaction based entirely on what applicant believes will be the situation four or five years hence. Part of the alleged savings can be attained by modification of the reciprocal arrangement between the Burling-

ton and the parties hereto, irrespective of our conclusion herein. The amount of future savings is uncertain and problematical. No present advantage in the public interest is shown."

"It may be inferred from applicant's argument that the purpose of this lease is to prevent or delay financial reorganization of the Colorado & Southern," concludes the majority's decision, "but there is no evidence to show, and under the requirements of the statute we cannot merely presume, that it is in the public interest to delay such financial reorganization. On the other hand, approval of this lease would probably have the effect of disabling the Fort Worth & Denver City from continuing as a separate property, in the event of the bankruptcy of applicant."

Commissioner Aitchison, who had temporarily sat with Division 4 and voted for approval of the merger, said, in a short concurring-in-the-result opinion, that he still believed the merger should be approved under the old law, but that the passage of the Harrington amendment had so changed the prospective savings as to make him change his mind. "It seems to me," wrote the commissioner, "that under the law as it now stands, before we can find consistency with the public interest, based upon saving in costs of operation, we must have a clear case either of realizable economies not affected by the Harrington amendment, or of economies of such amount and importance that, having regard for the interest of the carrier employees affected, the transaction should be carried out despite the delay in full realization which the Harrington amendment makes necessary."

After taking the majority to task for its interpretation of the workings of the Harrington amendment, Chairman Eastman went on to say that "in my judgment Congress did not, broadly speaking, intend to do more than protect the employees in the compensation they were receiving prior to the transaction." "To the extent that they obtain such compensation elsewhere," he continued, "the railroad should be released from payment. If I am right in this interpretation, therefore, it is probably that under present conditions applicant would soon be able to enjoy a very large part of the savings."

Taking up the question of the financial status of the two roads and the argument of the majority that the application was merely an attempt to stave off bankruptcy for the C. & S., Mr. Eastman could not agree that "we can properly withhold from a railroad system the opportunity to conduct its operations more economically, on the ground that it may be in need of financial reorganization. A railroad company has few greater duties than the payment of its honest debts, and surely we ought not to stand in the way of the performance of that duty."

"I may add," concluded Chairman Eastman, in referring to the threats of various Texas interests that they would boycott the two roads if the merger were approved, "that the opposition from Texas interests to the proposed transaction has taken on many of the aspects of a Kentucky feud or an Italian vendetta, and there have been many threats of reprisals from Texas public authorities and shippers in the event of our approval of the transaction and its consummation. Such threats certainly afford no basis for adverse action on our part. They are matters which could be given such consideration by the applicant's management as it might see fit, in the event of a grant by this commission of the necessary authority."

Wages Before Cars Says Union Chief

So that railroad employees will not have to forego "the righteous increase in income necessary to take care of rising costs of living," the cars and equipment required solely for national defense should be paid for by the taxpayers. This is the proposal made by President D. B. Robertson of the Brotherhood of Locomotive Firemen & Enginemen in an article to appear in the July issue of the union's magazine entitled "Railroad Wages—One Million Americans Can't Be Wrong." Writing to justify the recent demands by the transportation and non-operating unions for a basic wage increase of 30 per cent, the brotherhood chief declares at the outset that "railroad wages are not high and they have not kept pace with those paid in similar industries." That the idea of increased rates and fares may be involved in the subject is indicated by his statement that "the plight of the railroad employee as a class deserves more consideration from the public than he has enjoyed up to this time."

Listing at random certain increases in the wholesale prices of foods as compared with a year ago, and pointing to "nationwide successful efforts of other labor to maintain their standard of living and participate in soaring business activity," he asserts that the demands of railroad employees "already are over-due." He writes: "The public in many instances is not fully aware of the patience of railroad labor, since transportation workers have not as yet been given an opportunity to participate in the improved condition of their own industry as in the case of other workers. Moreover, while the railroads are one of the country's largest industries, their employees have never known the job and wage security that the public mistakenly attributes to them."

Discussing the ability of the carriers to absorb the burden of increased wages, Mr. Robertson argued that: "with carloadings promising to reach an all-time high by the end of this year, rail earnings are skyrocketing and will in all probability exceed the billion dollar mark." And elsewhere, "Labor demands an increased participation in today's railroad prosperity. Labor's unit of productivity has increased about 43 per cent in the past four years and it now demands a share. If workers did not share in the benefits flowing from improved efficiency and technological improvements, there would be no advance in the standard of living."

An editorial which appeared in the *Railway Age* of May 31 characterizing the move for increased wages as "just plain suicide for both the railroads and their employees" comes in for rough treatment in the article. Mr. Robertson thinks that it is the railroads which are committing suicide because of "excessive fixed charges and an enormous burden of debt." Of the stand taken by *Railway Age* that the railroads need money to buy equipment for national defense, he writes: "*Railway Age* sits back and pontificates from its well-upholstered sanctum, suggesting that the employees forego the righteous increase in income necessary to take care of rising costs of living and to maintain their position as a respected group of American workmen, so that the railroads may trundle off to market to buy themselves new box cars and other equipment. There is little use in dragging the subject of national defense into the picture. But this same publication suggests that labor should forego wage increases in order that the railways may purchase additional equipment needed only for national defense out of earnings. Thus the bill will be charged up to railroad labor in the end.

"This is a self-respecting democratic government. It pays for what it gets. It is foreign to our way of thinking to believe that the government would expect railroad labor to continue along at inadequate wages so that it could donate towards the purchase of additional equipment made necessary by national defense efforts. In all other industries, the government is quite willing to pay, and does pay, the cost of extra equipment required by reason of national defense demands. If more cars and equipment are required solely for national defense, then that is a legitimate expense of national defense and should be treated as such. The burden should not be put upon the workers in the industry, who with their families, represent about five million people."

Would Amend Retirement Act

Representative Peterson, Democrat of Florida, has introduced in the House H. R. 5147, a bill which seeks to liberalize the benefit payments of the Railroad Retirement Act.

James Whitcomb Riley Speeded Up

The New York Central, on June 23, reduced the running time of its James Whitcomb Riley, all coach streamliner which it placed in operation between Chicago and Cincinnati, Ohio, on April 28, 5 min. or to 5¼ hr.

Panama Canal Record Discontinued

The Panama Canal Record, official publication of the Panama Canal, has been discontinued "for an indefinite period." The last issue of the Record was that dated April 30, covering traffic through the Canal in March.

A. S. M. E. Officers Nominated

Nominations for 1942 officers of the American Society of Mechanical Engineers were announced on June 19 by A. L. Kimball, chairman of the regular nominating committee which held sessions during the semi-annual meeting of the society in St. Louis, Mo., June 16 to 19, inclusive. Names presented by the committee are: President, J. W. Parker, vice-president, Detroit Edison Company; Vice-Presidents, C. F. Freeman, vice-president, Manufacturers Mutual

Fire Insurance Company; C. B. Peck, managing editor, "Railway Mechanical Engineer" and mechanical department editor, *Railway Age;* W. H. Winterrowd, vice-president, Baldwin Locomotive Works; and W. R. Woolrich, dean of engineering and director, Bureau of Engineering Research, University of Texas; Managers, W. G. Christy, smoke abatement engineer, Hudson county, N. J.; H. L. Eggleston, manager Gas and Refining departments, Gilmore Oil Company; and T. S. McEwan, resident manager-engineer, McClure, Hadden & Orthan.

Susquehanna Earns Bond Interest

The New York, Susquehanna & Western enjoyed net earnings—before bond interest—for the first five months of the year of $306,734, an increase of $95,380 over those of the identical period of 1940. Interest charges for the period were $258,038. The road has never succeeded in earning full interest charges for any full year since 1919.

R. B. White Elected to A. A. R. Board of Directors

Roy B. White, president of the Baltimore & Ohio, has been elected a member of the Association of American Railroads board of directors, and of the executive committee. He succeeds Daniel Willard, chairman of the B. & O., who resigned his A. A. R. directorship because of his retirement from the B. & O. presidency.

K. C. S. Affiliate Denied Air-Route Certificate

The Civil Aeronautics Board has denied the application of the Kansas City Southern Transport Company, affiliate of the Kansas City Southern, for a certificate covering an airline route between Kansas City, Mo., and New Orleans, La., serving K. C. S. territory and including Tulsa, Okla.

Suspends Increased Charges for Tourist-Sleeper Berths

Pullman Company tariffs proposing to increase rates for berths in tourist sleeping cars in Illinois, Wisconsin, and states west of the Mississippi river have been suspended by the Interstate Commerce Commission from October 1 until May 1, 1942. The proceeding, docketed as I. & S. No. 4991, has been set for hearing at St. Louis on July 10 or as soon thereafter as the St. Louis hearing set for the same time in the commission's Nos. 28300 and 28310 investigations of the class rate structure and consolidated freight classification is concluded.

Pittsburgh Truck Strike Holds 800 Cars Under Load

At least 800 freight cars containing l. c. l. shipments or goods requiring handling by truck at team tracks have piled up in the Pittsburgh (Pa.) area by reason of a month-old truck drivers' and handlers' strike which has tied up all drayage, railroad terminal delivery and over-the-road truck operation since May 31. Despite the intervention of city officials and federal conciliation men, there was no indication of settlement at time of writing.

On June 14, the railroads put out an embargo on all l. c. l. shipments and freight destined to the area billed to consignees without railroad sidings. Nevertheless some 800 cars had already rolled into the city and nearby yards, most of which cannot be unloaded until trucks are moving. On June 23, the Pennsylvania reported 700 box cars "tied up in the Pittsburgh territory" and 25,000 shipments varying from one to any number of pieces, held in railroad yards. As much effort has been made as possible to store certain shipments in available rail-side warehouses.

Decision on Chicago Great Western Accounting

Passing upon proposed journal entries designed to reflect the new set-up in the property accounts of the reorganized Chicago Great Western, the Interstate Commerce Commission has agreed with the C. G. W. reorganization committee and the intervening Association of American Railroads to the extent of recognizing that original costs should be shown on the books and used in accounting for current exhaustion and replacements. The commission did not, however, agree that the reorganization write-down of fixed property should be reflected on the liability side of the balance sheet; its decision will require that the adjustment be set up on the asset side and deducted from the statement of original cost, leaving only the net figure, representing the commission's finding of worth, to be extended as a final balance-sheet item. With respect to equipment, any depreciation reserve "appearing on the books of the predecessor carrier or carriers shall be carried over to the books of the new company."

Accompanying the decision was an order modifying the accounting classification accordingly. Among other changes was the creation of the new adjustment account—702½, Acquisition Adjustment; and the cancellation of 757½—Reorganization Adjustments of Capital, and of 41—Cost of Road Purchased. Also, the title of 701—Investment in Road and Equipment—is changed to 701—Road and Equipment Property. The C. G. W. proceeding was docketed Ex Parte 138, and the general implications were such as to prompt the A. A. R. to intervene, as indicated above. Oral argument was covered in the *Railway Age* of February 1, page 256.

The proposal of the C. G. W. reorganization committee (giving effect to adjustments suggested by the Bureau of Accounts and accepted by the committee) was that the new company's investment in road and equipment account should show $87,080,600, while on the balance sheet's liability side the reorganization adjustments of capital account would show $22,601,900 and the accrued depreciation-equipment account, $5,739,900. Under the commission's decision the equipment depreciation reserve would remain on the liability side of the new company's balance sheet; but the reorganization adjustment figure would be shown on the asset side as a deduction from the $87,080,600 investment account, with only the net amount extended to enter the total-assets figure.

On the books this amount to be thus deducted would show as the credit balance in the new account 702½—Acquisition Adjustment; and it would be available upon application to the commission for "retirement of property in existence at the date of acquisition which is not replaced . . . if the loss is not assignable to operations subsequent to the date of acquisition." Also, "other charges to this account may be made upon specific approval by the commission."

Decision Pleases Accountants

The smile on the countenance of Ed Bunnell when he mounted the rostrum at the Denver meeting of the Accounting Division last Wednesday to announce the Commission's decision in the Chicago Great Western case was something to see. And the pleasurable surprise of all the audience bore witness to how tightly the Commission representatives at the convention had kept the secret. There was immediately a call for Accounts Bureau Director Crandall, who obliged the delegates by giving the details of the decision. If the I. C. C. had deliberately timed this, they couldn't have done a better job of putting drama into a convention.

Committee Appointed to Handle Wage Question for East

A committee of personnel and high operating officers from Eastern railroads to negotiate the demands of the five operating brotherhoods for a 30 per cent wage increase was appointed by F. E. Williamson, chairman of the Eastern Railroad Presidents Conference and president of the New York Central, during a meeting of that body in New York on June 19. The committee, which conforms closely to that appointed on March 20 to act in connection with demands of the non-operating unions for vacations-with-pay, is headed by R. W. Brown, vice-president (operation) of the Reading.

Budd Names Motor Truck Committee

Formation of a Central Motor Truck Transportation Committee with 16 regional committees to advise on motor truck transportation problems has been announced by Ralph Budd, transportation commissioner, Office for Emergency Management. John Rogers, Interstate Commerce Commissioner, was named chairman of the Central committee, with H. H. Kelley, Safety Chief of the Bureau of Motor Carriers of the I. C. C. as executive secretary. The 16 regional committees will have headquarters in the field directors' offices of the Motor Carrier Division of the I. C. C., and the field directors will act as regional committee chairmen.

"One of the immediate problems facing the committees," Mr. Budd asserted, "is that of priority in motor truck production.

A survey of the industry is now in progress. The data about trucks and truck operators, when obtained, will be passed upon initially by the regional committees, to ascertain whether a shortage of trucks exists."

Members of the regional committees will represent the various kinds of truck operations, including common carriers, contract carriers and private owners. Public members will include one each from the Highway Traffic Advisory Committee to the War Department and one from the Office of Civilian Defense.

5,559-Ton C. N. R. Car Ferry Sinks

While sailing to St. John, N. B., for its annual drydock overhaul, the 5,559-ton car ferry "Charlottetown" of the Canadian National sank on June 18 after striking an obstacle, the nature of which has not yet been determined, some four miles off the coast of Nova Scotia. The ferry, which is one of the largest ice-breaking ships of its kind in the world, was in regular service between Cape Tormentine, N. B., and Borden, P. E. I. No passengers or rolling stock were aboard and the crew escaped in life boats. The "Prince Edward Island" is continuing on the "Charlottetown's" run handling freight and passenger cars between the mainland and Prince Edward Island.

Mechanical Officers Receive Doctors' Degrees

Two high-ranking mechanical officers of American railroads were awarded honorary doctorate degrees the week of June 9. Fred W. Hankins, assistant vice-president (operating) of the Pennsylvania and past chairman of the Mechanical division, Association of American Railroads, was awarded an honorary degree of Doctor of Science by Bucknell University, Lewisburg, Pa., on June 9. The same week George McCormick, general superintendent motive power, Southern Pacific and Northwest Pacific, was awarded an honorary degree of Doctor of Engineering by the Agricultural & Mechanical College of Texas, College Station, Tex.

More on Northwest Petroleum Rates

Upward revision of the intra-state rates on petroleum products, in tank-car loads, from Portland, Ore., points on the Union Pacific east of The Dalles would be required if the Interstate Commerce Commission adopts Examiner Stiles' recommendation to the effect that such rates should be brought into line with the interstate adjustment prescribed in the I. & S. 4614 proceeding. The latter, which went to the Supreme Court where the commission was upheld, was the case involving the principal interstate rail and truck rates on petroleum and its products in the Mountain-Pacific Northwest; the railroad objections being based upon a contention that the minimum rates imposed upon them were higher than compensatory rates and were calculated to hold an umbrella over their higher-cost competitors.

The present proposed report by Examiner Stiles is in No. 28609, the complaint of the Asbury Transportation Company, a common carrier by motor vehicle. It embraces also I. & S. 4846 involving suspended interstate schedules published to meet the competition of the intra-state rates assailed in the complaint case. In view of his aforementioned recommended finding with respect to the latter, Examiner Stiles would have the commission order the cancellation of the suspended interstate tariffs.

N. & W. Honors 17 "Old Timers"

Before more than 2,000 veteran employees of the Norfolk & Western who gathered at Roanoke, Va., for their annual meeting on June 21, W. J. Jenks, president of the road, awarded the diamond insignia of the Norfolk & Western Veterans Association for 50 years or more of continuous service to 17 employees. Guest speaker was Gus W. Dyer, Professor of Economics, Vanderbilt University, who scored what he termed "the stupidity of investigating and discrediting business." He declared that: "Our great cities, great industrial centers, our immense wealth and widely-distributed luxuries and conveniences are pre-eminently the product of the railroads. The history of railroads is the history of industrial progress."

April Locomotive Shipments

April shipments of railroad locomotives totaled 74 as compared with 82 in March and 54 in April, 1940, according to reports received by the Department of Commerce's Bureau of the Census from the country's manufacturing plants. Shipments for this year's first four months totaled 264 as compared with 161 in the comparable period last year. Unfilled orders at the end of April totaled 622 locomotives as compared with 645 at the close of March and 170 as of April 30, 1940.

Data supplied by the Car Service Division on locomotive building in railroad shops show that five locomotives were thus produced in this year's first four months, as compared with 25 last year. On May 1 there were on order in railroad shops 27 locomotives.

Forwarders Facing the Deadline Again

Forwarders and a group of some 30 railroads were again petitioning the Interstate Commerce Commission this week for a further postponement of the effective date of outstanding orders which require the discontinuance of joint-rate arrangements between forwarders and motor carriers. The present effective date is July 1, but the orders have been postponed from time to time while Congress has worked on legislation for the regulation of forwarders.

The Wheeler-Reed bill for that purpose (S. 210) was passed by the Senate in March; but the House committee on interstate commerce was still working on its draft this week.

Freight Car Loading

Loadings of revenue freight for the week ended June 21 totaled 885,558 cars, the Association of American Railroads announced on June 26. This was an increase of 22,583 cars, or 2.6 per cent, over the preceding week, an increase of 157,065 cars, or 21.6 per cent, above the same week in 1940 and an increase of 247,024 cars, or 38.7 per cent, above the comparable 1939 week.

As reported in last week's issue, the loadings for the previous week ended June 14 totaled 862,975 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For Week Ended Saturday, June 14 Districts	1941	1940	1939
Eastern	188,165	152,011	132,436
Allegheny	195,068	152,475	122,120
Pocahontas	59,013	48,685	42,692
Southern	119,343	98,061	90,910
Northwestern ..	132,063	116,798	98,643
Central Western	116,719	100,932	102,197
Southwestern ..	52,604	43,959	44,957
Total Western Districts	301,386	261,689	245,797
Total All Roads	862,975	712,921	633,955
Commodities			
Grain and grain products	37,006	30,456	38,811
Live stock	10,007	9,709	9,457
Coal	158,621	122,037	97,176
Coke	13,165	10,442	5,809
Forest products	42,488	34,280	30,555
Ore	73,549	64,230	40,696
Merchandise l.c.l.	159,597	148,354	152,513
Miscellaneous ..	368,542	293,413	258,938
June 14	862,975	712,921	633,955
June 7	852,940	702,892	630,060
May 31	801,783	639,120	563,309
May 24	866,017	687,480	623,542
May 17	861,277	679,065	612,888
Cumulative Total, 24 Weeks ...	18,052,206	15,433,395	13,963,862

In Canada.—Car loadings for the week ended June 14 amounted to 65,431 cars, compared with 65,005 cars for the previous week and 56,876 cars for the corresponding week last year. The index number rose to 143.8, the highest reached for a number of years, according to the weekly statement of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
June 14, 1941	65,431	31,323
June 7, 1941	65,005	29,409
May 31, 1941	64,981	29,413
June 15, 1940	56,876	24,730
Cumulative Totals for Canada:		
June 14, 1941	1,368,292	698,027
June 15, 1940	1,183,737	587,694
June 17, 1939	1,024,803	502,670

Results of National Mediation Board Elections

Results of recent elections in representation-of-employees cases have been announced by the National Mediation Board. On the Central of Georgia the Board conducted an election to determine who should represent the yardmasters, and the Railroad Yardmasters of America received 11 votes, while nine were cast for the Brotherhood of Railroad Trainmen. Since no contestant received a majority of the 24 votes cast, the Board has closed the case without certification.

On the Central of New Jersey and the Hudson & Manhattan the patrolmen in the police departments have chosen as their representative the Railway Patrolmen's Union, Greater New York Local No. 22411, A. F. L.

On the Maine Central the Sheet Metal Workers International Association, operating through the Railway Employees Department, A. F. of L., has been chosen to represent the sheet metal workers in the maintenance of way department; while on the Natchez & Louisiana Railway Transfer the National Organization Masters, Mates,

and Pilots of America has won the right to represent the master-pilot, coal passer, carpenter, carpenter helper and deck hands on the car ferry.

On the Western Pacific the Board has certified that the American Railway Supervisors' Association, Inc., has won the right to represent the mechanical department foremen or supervisors of mechanics; while at the Portland (Me.) Terminal the red caps have chosen the United Transport Service Employees of America as their representative for purposes of the Railway Labor Act.

OPACS After Wheel Builders

Railroad car wheel builders are being asked to withdraw "the substantial price increase they had proposed to put in effect July 1" and, instead, to meet on that date for discussions on the matter with representatives of the Office of Price Administration and Civilian Supply in Washington.

The request was contained in a letter sent June 23 to 16 car wheel manufacturers by Leon Henderson, OPACS administrator, who said his office could continue its present policy of inviting voluntary cooperation, rather than formal controls, "only so long as individual businesses are willing to assume the responsibility of maintaining price stability." Confidence was expressed by the administrator that the need for further action in the present situation could be avoided. The car wheel industry has a position of "strategic importance" in the defense effort, the letter pointed out, in addition to its place in the general industrial economy.

Estimated Weights on Fruits and Vegetables

Without prejudice to the filing of new schedules in accordance with principles and suggestions set forth, the Interstate Commerce Commission has found not justified a proposed general revision of estimated weights on fruits, except citrus, vegetables, melons, and berries, and proposed charges for transportation of package ice, from and to all origins and destinations in the country except from origins in Official territory. Generally, the majority report by Commissioner Mahaffie criticized the railroad methods of making the test weights which formed the basis of the estimated weights proposed.

The proceeding is docketed as I. & S. No. 4577, and Commissioner Johnson dissented. He cited evidence of excessive loading of packages, suggesting that excessive loading should not be recognized by taking test weights of bulged packages; and that the bulging of packages should be forbidden by tariff provisions.

Express "C. O. D." 100 Years Old

The "C. O. D.," an American commercial institution first introduced by the express business, is 100 years old this month. Early annals of transportation in the United States indicate that the "cash on delivery" system was introduced in express service in June, 1841. Erastus Elmer Barclay, a New York merchant, went into the Broadway office of Harnden's express company, the first in the United States, established two years before, and, placing a package on the counter, said: "I want to have this sent to my customer at Fulton, in Oswego county, but don't let him have it until he pays $16.50. If he does, send the money to me and I will pay you for the service."

Harnden agreed and the deal was carried out successfully. Barclay's odd request, one hundred years ago, actually established "C. O. D."

In 1940, the Railway Express Agency handled approximately 6,000,000 c. o. d. transactions and collected from consignees, on delivery of shipments, an estimated total of $47,380,000.

Proceedings F. & T. E. A. Association—A Correction

The price of the Proceedings of the Fuel & Traveling Engineers' Association is $3, not $2, as mentioned on page 986 of the May 31 issue of the *Railway Age*.

Motor Act Interpretation

A trucking company operating common-carrier services on intra-state routes and contract-carrier services across state lines cannot claim for the former the benefits of the Interstate Commerce Act's section 206(a) which exempts from the act's certificate provisions intra-state operations conducted pursuant to authority from a state regulatory body. In passing upon several applications of the Baggett Transportation Company of Birmingham, Ala., the Interstate Commerce Commission, Division 5, has ruled that such a set-up must be considered as a whole, thus becoming that of a carrier operating in more than one state.

After disposing of the Baggett's contention in that connection, the commission went on to give the applicant a "grandfather-clause" certificate for common-carrier operations between Montgomery, Ala., Birmingham and Selma; and to find that public convenience and necessity required like operations over another route between Birmingham and Florence, Ala. Also, the decision held that Baggett's dual contract and common carrier operations would be consistent with the public interest and the national transportation policy.

Army Railroads Expand Under Defense Program

"Under the increased tempo of the defense program the Army's railroad operations have been considerably extended in the 86 forts, depots, flying fields and other Army stations that have railroad facilities," said a June 23 statement from the War Department.

Among the equipment operated by the Army are two specially designed cars for the transportation of helium. During the year ending June 1, 1941, the Army increased the number of its locomotives by 36 per cent; its railroad cranes by 38 per cent and its tank cars by 37 per cent.

More than one-half of its locomotives are steam operated but the newer ones are operated by gasoline motors.

The only Army-owned equipment that operates outside Army posts are tank cars, including the two helium tank cars. Tank cars are used to transport gasoline to Army posts, camps and stations. Locomotive cranes are used for loading and unloading of large and heavy items of equipment and of bulk materials such as sand and coal. To keep all this railroad equipment in condition, the Quartermaster Corps has railroad repair shops at Holabird Quartermaster Depot, Baltimore, Md., and at Fort Benning, Ga.

Willkie Pays High Tribute to Sam Pryor, Jr.

Wendell L. Willkie, in a brief address at a luncheon to Samuel F. Pryor, Jr., held at the Hotel Commodore, New York, on June 23, paid high tribute to Mr. Pryor's qualities as a friend and "the most regular fellow" it had been his pleasure to meet. The luncheon, presided over by Charles A. Braden, general traffic manager, National Distillers Products Corporation, and attended by over 350 railway, railway supply, and industrial traffic men, was on the occasion of Mr. Pryor's leaving the railway supply field to enter air transport as vice-president and assistant to the president of Pan American Airways Corporation. Others who spoke were William F. Cutler, president of the Southern Wheel Division, American Brake Shoe & Foundry Co., to whom Mr. Pryor had been assistant; Juan T. Trippe, president and general manager, Pan American Airways Corporation, and Charles C. Hubbell, general purchasing agent, Delaware, Lackawanna & Western.

In response to his tribute, Mr. Pryor, who was Republican national committeeman from Connecticut, declared that Mr. Willkie stood for all that free enterprise means and that if we do not protect it, our form of government will fail. He added that this is the only reason he has been in politics.

Meetings on Paid Vacations Called Off

Meetings of management and labor representatives with the National Mediation Board in connection with the demand of 14 non-operating unions for vacations with pay have been called off. Although it was stated at offices of the Mediation Board that the case was "still before the Board" last week's reports from labor circles were to the effect that the interested labor organizations had decided to drop the negotiations to "concentrate on the drive for fatter pay envelopes for their members," i. e., on the pending demand for a 30 per cent increase in wages.

Labor's decision to drop (or at least hold in abeyance) the paid vacations issue came when the case had reached a point where the Mediation Board was awaiting an answer to its suggestion that the parties agree to arbitration. The Mediation Board would not say what answers it had received in response to the proffer of arbitration; but this week's issue of "Labor" called the railroad demand for changes in working rules a move which demonstrated "lack of the good faith necessary for successful arbitration of the vacation problem." Mediation meetings in connection with the vacations demand commenced on March 19, and, except for a couple of recesses, have continued since that time. Presumably the Mediation Board's position that the case is "still before the Board" is a technical

one; the Board would not close the record on such a case until parties submitted formal withdrawals, or the matter moved on to become an emergency-board proceeding.

Disapproves Rate Adjustment to Meet Competition in Southwest

Proposed reductions in carload rates on 16 selected commodity groups between California and Arizona, New Mexico, and El Paso, Tex., have been found by the Interstate Commerce Commission, Division 2, to be unlawful in certain instances and not unlawful in others. The same report (by Commissioner Aitchison) also dealt with a complaint assailing less-carload pickup-and-delivery rates between the same points; and, finding them unreasonably low in certain instances, it prescribed reasonable minimum rates for that service.

The title proceeding was docketed as I. & S. No. 4713, while the complaint was No. 28369, the complainant being the Interstate Freight Carriers' Conference, Inc., which was among the motor carrier protestants in the title case. The principal railroads concerned were the Southern Pacific and the Atchison, Topeka & Santa Fe.

Generally the commission, finding it impracticable to pass upon each individual rate, concluded that it should deal with the proposed adjustment as a unit. The decision, therefore, set up specifications which rate changes of the kind proposed should be required to meet, striking down any of the proposals which did not thus qualify. In other words, the proposed carload rates were disapproved "to the extent that they yield ton-mile earnings for longer hauls in excess of those on the same commodity for shorter hauls over the same line"; and the assailed l. c. l. pickup-and-delivery rates were declared unreasonable to the extent that they are lower than rates under a distance scale set up in an appendix to the report.

Richmond-Greyhound Finally Gets Peninsula Transit

Reversing Division 5, the Interstate Commerce Commission in a report on reconsideration has conditionally approved the merger into Richmond-Greyhound Lines, affiliate of the Richmond, Fredericksburg & Potomac, of operating rights and property of the Peninsula Transit Corporation. The conditions will require Richmond-Greyhound to write off to surplus the amount of increase in its "Other Intangible Property" account resulting from the transaction; and to renew its offer to sell a Richmond, Va.-Norfolk route to the Carolina Coach Company for $10,000.

Dissents of Commissioners Porter and Rogers were noted, while Commissioner Lee did not participate. The commission's favorable action in this proceeding came after two adverse reports by Division 5. As noted in the *Railway Age* of March 26, 1938, the first decision was based on that provision of the Motor Carrier Act which stipulated that when railroads or railroad affiliates are involved in acquisitions, there must be a showing that the proposed transaction will enable "such carrier other than a motor carrier to use service by motor vehicle to public advantage in its operations, and will not unduly restrain competition." That difficulty was resolved at the further hearing before Division 5, the evidence showing the three R. F. & P. representatives on Richmond - Greyhound's board of seven directors had resigned their former positions as the latter's vice-president, assistant traffic manager and auditor.

But Division 5 was still not satisfied. As noted in the *Railway Age* of July 13, 1940, a second adverse decision was based on a finding that the transaction "would not be consistent with the public interest" in that it would eliminate much of the bus competition from the territory served by Peninsula, which territory "roughly describes a triangle, bounded by Baltimore, Richmond and Norfolk."

"It's a H——l of a Job to Burn Up a Railroad"

On the night of Saturday, June 21, the important four track bridge of the Boston & Maine over the Mystic River in Somerville, Mass. (a few miles out of Boston), was put out of commission by a fire. But on Monday morning all trains were operating practically on time and commuters "read all about it" in a quarter-page advertisement placed by the road in the morning paper.

The advertisement, which was headed by "It's a H--l of a Job to Burn Up a Railroad," stated, among other things, that the road was giving service as usual only 35 hr. and 13 min. after a $125,000 fire swept its Mystic River bridge, damaging timber and ties, bending and twisting rails and destroying drawbridge machinery and signal apparatus. The rehabilitation was described as follows:

"Weather almost as hot as the fire. Railroadmen scatter on hot weekends for beaches, lakes and mountains—just like ordinary folks.

"But, before midnight Saturday, materials from as far as Nashua, Manchester and Concord, N. H. (and many other points), were arriving at the bridge in ever-increasing quantity, behind snorting locomotives. Even before that, men—loyal New Englanders who are B. & M. employees—were arriving from all over Massachusetts, New Hampshire and Maine by the score—one after the other.

"Railroad engineers, laborers, trackmen, carpenters, electricians, signalmen, representatives of all the scores of crafts that the Boston & Maine employs 365 days in the year. They left family supper parties, cool seashores, pleasant lakes—dropping whatever they were doing as the emergency alarm reached them, and raced to the bridge.

"Scores of other officials and employees —men and women, too, rushed to general offices and key points to organize emergency substitute service.

"While Greater Boston folks sweltered (and relaxed) over the week-end these men and women of the Boston & Maine's organization sweat and scurried, all through Saturday night, all day Sunday and again all Sunday night.

"Result—35 hours and 13 minutes after the embers had cooled sufficiently to examine them, railroad passengers—in safety and comfort—were riding over the bridge once more. Yes, in complete safety, including full signal control.

"To our patrons in Malden, Melrose, Wakefield and Reading who were so gracious during the first hour the fire burned; and to those who likewise were good enough to accept our substitute bus service or to use other transportation systems on Sunday we extend thanks for forbearance.

"That first hour—after the fire started—was pretty hectic. Maybe in the next emergency we will do even better than getting substitute service organized and operating in a couple of hours.

"We'll bet your Aunt Matilda's best Sunday chemise that Nero didn't get his fiddle-playing organized during the first hour of that blaze in Rome! Did you ever try to dig up a dozen bus drivers who are off duty in an hour at supper time on a hot Saturday night?"

Read All About the B. & M. in Readers Digest

The Boston & Maine is in the July "Readers Digest," one of the most widely-read publications in the country. An article entitled "Yankee Ingenuity Makes a Railroad Pay" describes activities by the road's management and employees in the last ten years to "sell transportation."

This is a condensation from an article entitled "The Bustling & Modern," by T. E. Murphy, appearing in "Forbes" for June 15. The author describes the comeback the road has made since the darkest days of depression; its advertising "stunts"; its snow, hike, bike, Whoopee, and barn dance trains; its speed-up in traffic; its record in operating efficiency and successful administration of its voluntary plan of bond adjustment.

That the Boston & Maine is still on the job is evidenced by its handling of a bridge failure this past week-end which is described in a news article elsewhere in this issue.

Railroads Spent $11,704,335 for Advertising in 1940

Total advertising expenditures of the Class I railroads in 1940 were $11,704,335, as compared with $12,083,783 in 1939, $9,752,671 in 1938 and $11,521,531 in 1937, according to reports made to the Interstate Commerce Commission. The data were analyzed in a recent statement sent by Robert S. Henry, assistant to the president, Association of American Railroads, to railroad public relations representatives.

The 1940 figure represented a decrease of 3.1 per cent under the preceding year; an increase of 20 per cent over 1938; and an increase of 1.6 per cent over 1937. In 1940, the Class I roads spent $2.72 for advertising out of each $1,000 of gross revenue; in 1939, they spent $3.02; in 1938, $2.74; and in 1937, $2.77. The decrease in 1940 as compared with 1939 is accounted for by declines of $362,154 or 6.7 per cent in expenditures for literature and "other advertising," and of $85,909 or 1.9 per cent in the outlay for newspaper advertising. Mag-

azine advertising increased $58,435 or 4.9 per cent, while radio advertising was up $13,575 or 5.2 per cent.

Of 1940's total expenditures, newspapers received 38.5 per cent; magazines, 10.7 per cent; and radio, 2.3 per cent. The comparable figures for 1939 were 38 per cent for newspapers; 9.9 per cent for magazines; and 2.1 per cent for radio. Of the total amount spent for space in newspapers and magazines and radio time and talent in 1940, the newspapers received 74.7 per cent; magazines, 20.7 per cent; and radio, 4.6 per cent. The comparable figures for 1939 were 76 per cent for newspapers; 19.7 per cent for magazines; and 4.3 per cent for radio.

Third-Quarter Loadings Expected to Be 14.8 Per Cent Above 1940

Freight car loadings in the third quarter of 1941 are expected to be about 14.8 per cent above actual loadings in the same quarter of 1940, according to estimates compiled by the 13 Shippers' Advisory Boards. On the basis of those estimates, freight car loadings of the 29 principal commodities will be 7,272,955 cars in the third quarter of 1941, compared with 6,337,841 actual car loadings for the same commodities in the corresponding period in the preceding year.

Shippers' Advisory Boards	Actual Loadings Third Quarter 1940	Estimated Loadings Third Quarter 1941	Per Cent Increase
New England	91,024	102,167	12.2
Atlantic States	618,464	682,328	10.3
Allegheny	896,811	1,005,406	12.1
Ohio Valley	759,285	951,712	25.3
Southeast	609,054	685,535	12.6
Great Lakes	524,822	636,694	21.3
Central Western	201,510	223,622	11.0
Mid-West	859,986	959,762	11.6
Northwest	631,992	710,416	12.4
Trans-Missouri-Kansas	344,610	383,371	11.2
Southwest	345,700	398,033	15.1
Pacific Coast	249,915	296,514	18.6
Pacific Northwest	204,668	237,395	16.0
TOTAL	6,337,841	7,272,955	14.8

All of the 13 Boards estimate an increase in carloadings for the third quarter of 1941, compared with the same period in the preceding year. The tabulation below shows actual carloadings for each district in the third quarter of 1940, the estimated loadings for the third quarter of 1941, and the percentage of increase or decrease:

The Shippers' Advisory Boards estimate an increase in the third quarter of 1941, compared with the same period one year ago, in the loading of each of the 29 principal commodities included in the forecast. Among those commodities showing the greatest increase are the following: Automobiles, trucks and parts, 54.9 per cent; machinery and boilers, 31.8 per cent; agricultural implements and vehicles other than automobiles, 25.6 per cent; chemicals and explosives, 25.2 per cent; brick and clay products, 22.4 per cent; cement, 20.4 per cent; gravel, sand and stone, 18.6 per cent; coal and coke, 17.0 per cent; ore and concentrates, 16.6 per cent; iron and steel, 16.5 per cent; paper, paperboard and prepared roofing, 16.5 per cent; all canned goods, 15.5 per cent; cotton, 15.1 per cent; lime and plaster, 12.2 per cent; grain, 10.4 per cent; lumber and forest products, 10.3 per cent; fresh vegetables other than potatoes, 10.1 per cent; fresh fruits other than citrus fruits, 9.4 per cent; hay, straw and alfalfa, 9.1 per cent; fertilizers of all kinds, 9.1 per cent; and sugar, syrup and molasses, 8.4 per cent.

New Streamliner Service for Pacific Coast

Streamliner service on the San Joacquin Valley daytime run between San Francisco, Calif., and Los Angeles will be inaugurated by the Southern Pacific on July 4. Two deluxe coach trains, the San Joacquin Daylights will operate on a schedule of 11 hr., 40 min. southbound and 11 hr., 50 min. northbound for the 483 miles. The train will leave San Francisco at 8:00 A. M., as at present, and will arrive in Los Angeles at 7:40 P. M. as at present. Northbound it will leave Los Angeles at 9 A. M. instead of 8:50 A. M. and will arrive in San Francisco at 8:50 P. M. as at present.

July 4 will also mark the completion of the inauguration of 51 passenger cars recently constructed by the Pullman-Standard Car Manufacturing Co. Of these 51 cars, 6 have been assigned to the "Larks," 3 to the "Californians," 4 to the "Noon Daylights," 10 to the "San Joacquin Daylights," and 28 to the "Morning Daylights." The 26 cars released from the "Daylights" will be used on the "San Joacquins" the "Argonauts" and the "Sunsets."

Chicago Court Approves C. & N. W. Reorganization

The District Court at Chicago on June 25 issued an opinion giving final approval to the reorganization of the Chicago & North Western following arguments by attorneys for the railroad and stockholders against the plan which the court first approved on October 12, 1940.

New Locomotives and Cars to Expand Florida Service

The addition of a total of twelve 2,000-hp. locomotives and 32 lightweight passenger-train cars by the Pennsylvania, Atlantic Coast Line and Florida East Coast will greatly expand passenger service from New York to Florida next winter. Of this new equipment the A. C. L. has ordered nine locomotives from the Electro-Motive Corporation and 16 cars from the Edward G. Budd Manufacturing Company, as announced in the *Railway Age* of June 14, page 1906.

By addition of six new cars (three sets of two cars each) "The Champion" (New York-Miami) will become a 16-car train daily. Inaugurated December 1, 1939, as a seven-car train, this run was expanded to 14 cars in the 1940-41 winter season. The other 26 lightweight passenger train cars to be put in Florida service will make up a new daily, eight-car, lightweight, streamlined, Diesel-powered coach train, between New York and Tampa and New York and St. Petersburg via P. R. R., R. F. & P. and A. C. L. This will be the first streamlined coach service to and from the West Coast of Florida offered by the Coast Line. The train—the name of which has not yet been announced—will operate daily between New York and Jacksonville with eight cars, consisting of passenger-baggage-dormitory car, dining car, tavern-lounge-observation car, and five coaches. At Jacksonville all cars but the last two coaches will continue to Tampa, while the latter, supplemented by additional lightweight diner-lounge and lightweight passenger - baggage - dormitory car, will operate to St. Petersburg.

Purchase of the additional Diesel-electric road passenger locomotives will enable Dieselization for the first time of the Florida Special (West Coast). Heretofore powered by steam locomotives south of Washington, D. C., the train will be Diesel-hauled from that point to both Tampa and St. Petersburg. The Florida Special (East Coast) is already powered by Diesel-electric locomotives.

Regulations Governing Special or Chartered Party Bus Service

Rules governing the transportation of special or chartered parties by common carriers by motor vehicle have been prescribed by the Interstate Commerce Commission, Division 5, following its Ex Parte No. MC-29 investigation of the subject. The rules, prescribed under section 208(c) of the Interstate Commerce Act, cover only special or charter party service incidental to a regular-route operation; in other words they "shall not be applicable to common carriers of passengers authorized by a certificate of public convenience and necessity to perform special or charter operations or both . . . under the provisions of the first proviso of section 206(a) of the act, or under the proviso of section 207(a) thereof, which specific operations shall be limited strictly to the authority described in the certificate of each carrier so engaged."

There are six rules. The first deals with the applicability (indicated above); the second with definitions; the third with origin territory; and the fourth with destination territory. The latter two stipulate that any common carrier of passengers subject to the rules may transport special or chartered parties which originate at points served by its regular routes "to any place or point in the United States." However, special parties may not be transported from the destination territory to the origin territory "except on return movement of the same special or chartered party." Rule V, General Provisions, requires among other things that tariffs for the special-party service be published, and that all-expense arrangements must be set up to show the transportation charges separately.

Rule VI, Limitations of Service, provides that charter service must not be so frequent "as to constitute a regular scheduled or

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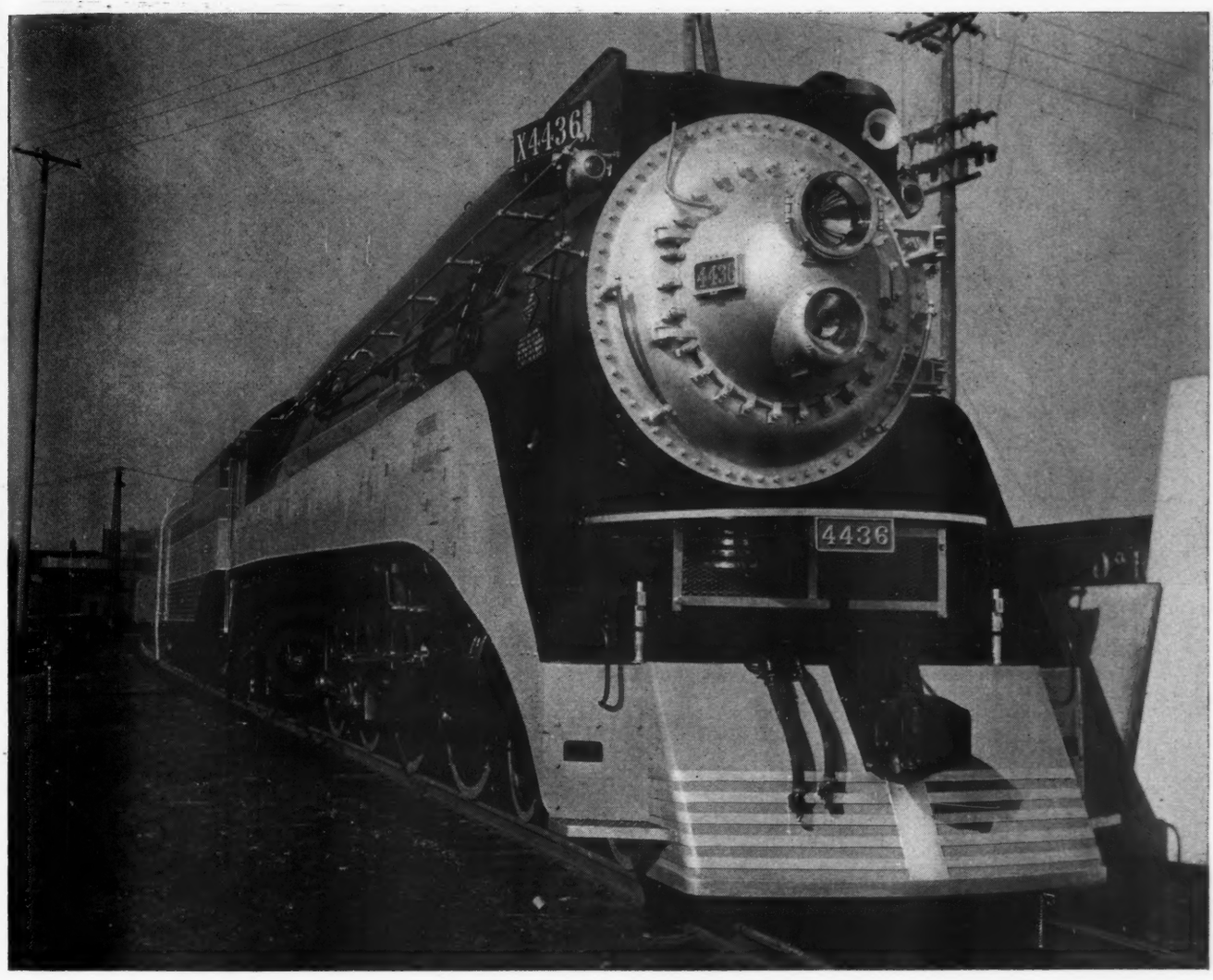


The FIRST of a new fleet of *Daylights*

The Lima Locomotive Works, Incorporated has recently delivered twenty high-speed Super-Power Steam Locomotives of the above type to the Southern Pacific Company and now have an order for ten additional locomotives of the same type for them. These locomotives are to be used in the handling of the Railroad's fast passenger trains for lines East as well as the San Francisco-Los Angeles runs.

Passenger traffic has doubled on these lines since these luxurious high-speed steam trains were inaugurated.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED **INCORPORATED, LIMA, OHIO**

33 1/3% increase in

(WITHOUT INCREASING THE SIZE OF THE LOCOMOTIVE)

by application of...

The steam locomotive is possessed of latent power which now can be released by The Franklin System of Steam Distribution. This system, which is applicable to existing as well as new steam locomotives, is the result of years of experimentation, research and road tests and is offered to the railroads as a means of increasing train speed and load capacity without increasing the size of the locomotive.

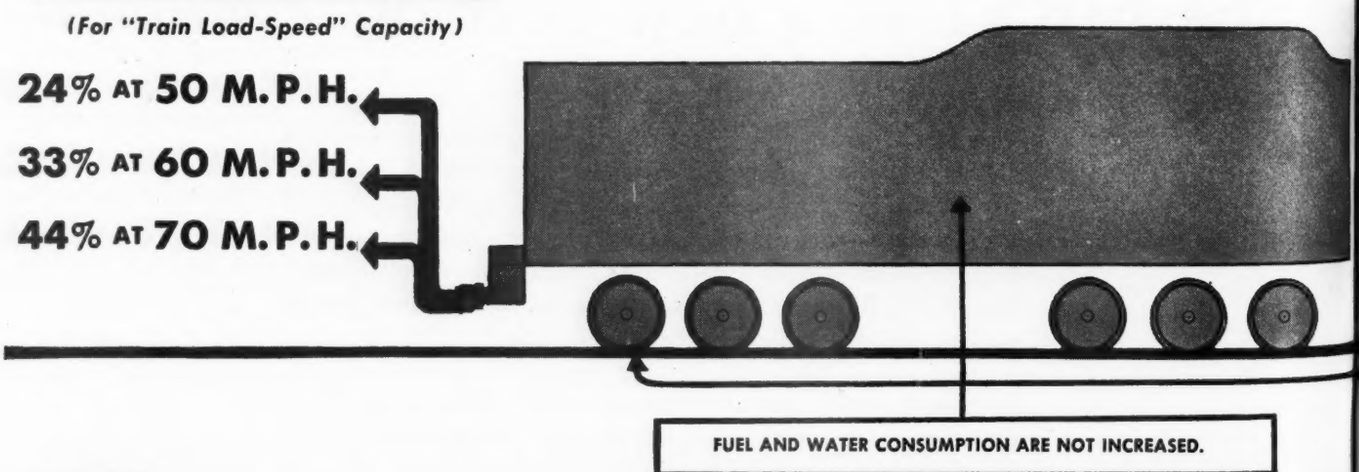
INCREASED DRAWBAR HORSEPOWER

(For "Train Load-Speed" Capacity)

24% AT 50 M.P.H.

33% AT 60 M.P.H.

44% AT 70 M.P.H.



FUEL AND WATER CONSUMPTION ARE NOT INCREASED.

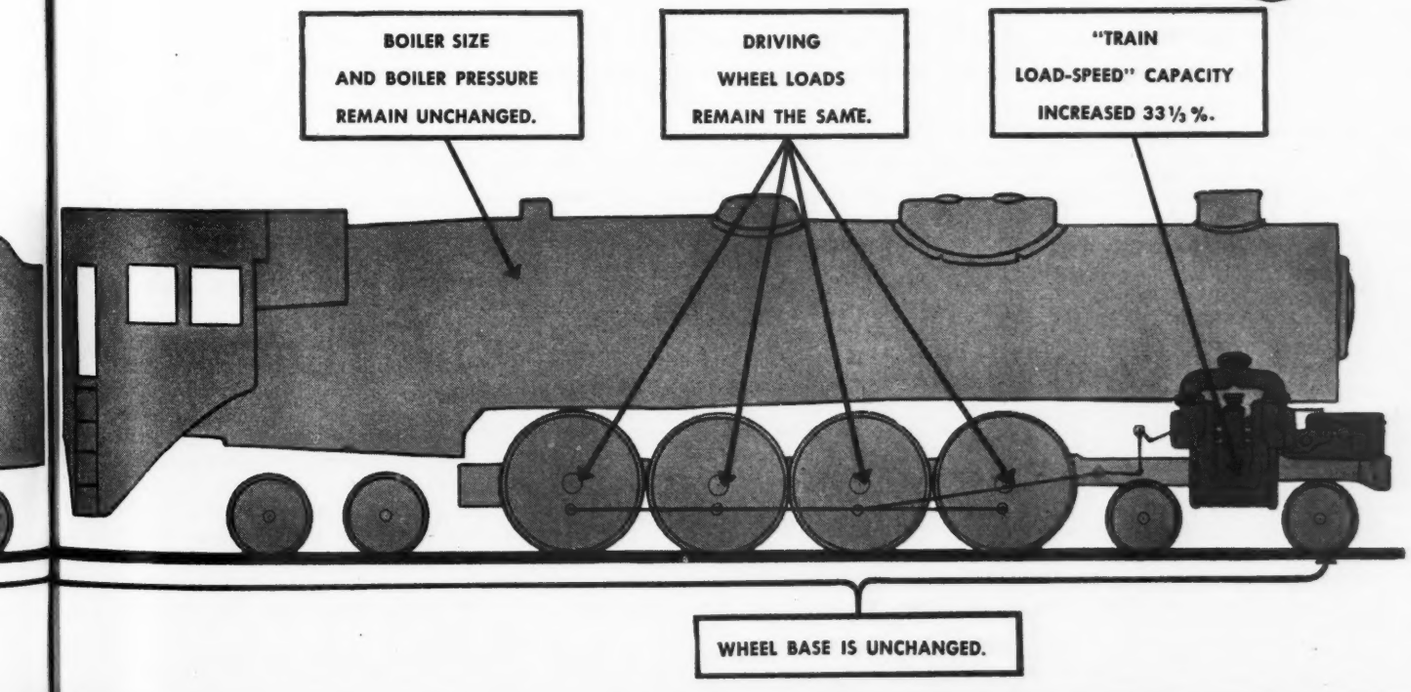
REG. U.S. PAT. OFF.

FRANKLIN RAILWAY SUPPLY

In Canada: Franklin Railway

"train load-speed capacity"

THE FRANKLIN SYSTEM of Steam Distribution



COMPANY, INC. NEW YORK • CHICAGO

Supply Company, Limited MONTREAL

non-scheduled service"; that the carriers shall not transport in the service passengers "to whom individual tickets have been sold or with whom separate and individual transportation arrangements have been made"; and that no carrier authorized to perform seasonal operations over regular routes shall transport special or chartered parties "except during the period in which such regular-route operations may be performed."

Commissioner Lee, concurring in part, approved the rules except for the latter two stipulations. The majority report represented the views of Commissioners Rogers and Alldredge.

Ditch Opponents Get Under Way

(*Continued from page 1191*)

with the power phases of the project. He wanted the committee to consider whether or not the United States was properly safeguarding its power interests, and he went on to point out that New York State feels that it owns the power to be developed and hopes to use it exclusively in that state, while the United States Supreme Court in the recently-decided New River case, had held that any power produced as a result of flood control or navigation improvement works is the property of the national government.

He also pointed out that it was highly improbable that Canada would be able to complete its part of the project on time due to the war effort and the attendant lack of funds, labor, and materials. In other words, he declared, the United States will have to do the job if it is ever done.

The other witness at the June 24 hearing was Captain R. L. England of the Lake Carriers Association, who condemned the project as "impractical" and "unnecessary." He felt that it would be too expensive to handle ocean ships in the canals on the St. Lawrence. "If we need more ships and shipbuilding facilities," he told the committee, "then let's build them along our ocean shoreline." He also pointed out that the lake ships are specially designed for canal and lock operation, while ocean-going ships are much more difficult to handle in canals due to their being designed for operation on the open ocean. He was fearful that if the project were built, foreign ships would come into the Canadian and American ports and bring coal from Europe, thus destroying part of the lake carriers' business.

Another lake carrier witness was L. C. Sabin, vice-president of the Lake Carriers Association, who also opposed the project along much the same lines as did Captain England. He was also accused by Mr. Culkin of collaborating with the A. A. R. in the opposition to the project, but this, he denied, except to say that he had conferred with R. V. Fletcher, vice-president and general counsel of the A. A. R. at various meetings of the National St. Lawrence Project Conference.

Another witness at the June 25 meeting of the committee was C. J. Hamlin, chairman of the Niagara Frontier Planning Board, who opposed the project as "unsound," contending that its completion would jeopardize the interests of western New York state. He estimated the final cost of the project at $1,120,588,000.

Meanwhile, testimony of the proponents subsequent to that reported in last week's issue was given by Rear Admiral George H. Rock, retired, former chief constructor of the Navy; Brigadier General Thomas M. Robins, assistant to the chief of engineers of the War Department; Secretary of Commerce Jesse Jones; and Leland Olds, chairman of the Federal Power Commission.

Admiral Rock reported findings made in a survey of Great Lakes shipbuilding facilities and testified that large ships could not be built in the Great Lakes unless the waterway were completed to permit their exit to the ocean.

Brigadier General Robins discussed estimated costs of the various features of the project, placing the total cost at $579,252,000. He also felt that the project could be completed late in the fall of 1944 "with luck," by which, he said, he meant the absence of delays caused by ice conditions and difficulties in obtaining materials.

Mr. Jones felt that as a defense necessity the project could not be too strongly stressed. The Secretary of Commerce also told the committee that the project could be built without costing the taxpayers any money by imposing tolls on the seaway and selling the power.

The testimony of Mr. Olds dealt with results of a power survey recently made by his agency. He felt that the country would soon experience a power shortage and that a good way to meet this would be to immediately begin the construction of the St. Lawrence project, which, he said, would produce some 2,200,000 horsepower.

At the same time the Office of Production Management announced that C. W. Kellogg had resigned as consultant on heat, light, and power, in conformity with the policy recently adopted by the O. P. M. making employees of trade associations ineligible for employment as members of the O. P. M. organization.

In this connection, as pointed out in the *Railway Age* of June 14, page 1071, the O. P. M. cracked down on Mr. Kellogg for a speech which the latter made in Buffalo in which he said no shortage was to be expected in electric power.

Increased Space Engaged for Track Supply Exhibit

Plans for the annual exhibit of the Track Supply Association to be held at Chicago on September 15-18, in conjunction with the annual convention of the Roadmasters' and Maintenance of Way Association, are actively under way, and 51 companies have made reservations for 76 exhibit spaces. This is two more companies than had applied for space at this time last year, while the space reservations are already greater than were occupied at the exhibit in 1940. With a number of applications still pending, it is expected that the exhibit this year will break all previous records with respect to both the number of companies participating and the space occupied. Further applications for space should be addressed to Lewis Thomas, secretary-treasurer, Track Supply Association, 59 East Van Buren street, Chicago.

The directors of the Association met in Chicago on June 18, to complete plans for the exhibition, to allot space to those companies whose applications had been received, and to arrange for other features connected with the exhibit and convention.

The companies that had made applications for space up to June 28, follow:

Air Reduction Sales Co., New York.
American Fork & Hoe Co., Cleveland, Ohio.
Armco Railroad Sales Co., Middletown, Ohio.
Barco Manufacturing Co., Chicago.
The Buda Company, Harvey, Ill.
Chicago Pneumatic Tool Co., New York.
Chipman Chemical Co., Inc., Bound Brook, N. J.
The Creepcheck Co., Inc., Newark, N. J.
Crerar Adams & Co., Chicago.
Cullen-Friestedt Co., Chicago.
A. P. DeSanno & Son, Inc., Phoenixville, Pa.
The Duff-Norton Mfg. Co., Pittsburgh, Pa.
Eagle Grinding Wheel Co., Chicago.
Elastic Rail Spike Corp., New York.
Electric Tamper & Equipment Co., Ludington, Mich.
Fairmont Railway Motors, Inc., Fairmont, Minn.
Hayes Track Appliance Co., Richmond, Ind.
Ideal Power Lawn Mower Co., Lansing, Mich.
Illinois Malleable Iron Co., Chicago.
Ingersoll-Rand Co., New York.
O. F. Jordan Co., East Chicago, Ind.
Joyce-Cridland Co., Dayton, Ohio.
Kalamazoo Railway Supply Co., Kalamazoo, Mich.
Link Belt Speeder Corp., Chicago.
The Lundie Engineering Corp., New York.
Maintenance Equipment Co., Chicago.
Mall Tool Co., Chicago.
Morden Frog & Crossing Works, Chicago.
Moto-Mower Co., Chicago.
Nordberg Mfg. Co., Milwaukee, Wis.
Northwestern Motor Co., Eau Claire, Wis.
The Oxweld R. R. Service Co., Chicago.
Oliver Iron & Steel Co., Pittsburgh, Pa.
Positive Rail Anchor Co., Chicago.
The P & M Company, Chicago.
Pettibone-Mulliken Corp., Chicago.
Pocket List of Railroad Officials, New York.
Power Ballaster Co., Chicago.
The Q & C Company, New York.
The Rail Joint Co., Inc., New York.
The Rails Company, New Haven, Conn.
Railway Engineering & Maintenance, Chicago.
Railway Purchases & Stores, Chicago.
Railway Track-Work Co., Philadelphia, Pa.
Ramapo Ajax Division of the American Brake Shoe & Foundry Co., New York.
Sperry Rail Service, Hoboken, N. J.
Templeton, Kenly & Co., Chicago.
Warren Tool Corp., Warren, Ohio.
Woodings Forge & Tool Co., Verona, Pa.
Woodings-Verona Tool Works, Verona, Pa.
Woolery Machine Co., Minneapolis, Minn.
Worthington Pump & Machinery Corp., Harrison, N. J.

Truck Freight at All-Time High in May

Freight transported in May by carriers reporting their loadings to American Trucking Associations, Inc., "climbed two per cent above April to reach an all-time peak," according to A. T. A.'s statement. The May volume was 35 per cent above that carried in May, 1940; and the A. T. A. index, based on the 1938-1940 average monthly tonnage of the reporting carriers, stood at 146.47, as compared with April's 143.24.

Comparable reports for May were received from 194 motor carriers in 39 states. The reporting carriers transported an aggregate of 1,399,952 tons in May, as against 1,372,560 tons in April, and 1,037,021 tons in May, 1940.

Slightly more than 79 per cent of all the freight transported in the month was reported by carriers of general freight. The volume in this category increased 1.5 per cent over April, and 38.5 per cent over May of the previous year. Transporters of petroleum products, accounting for a little

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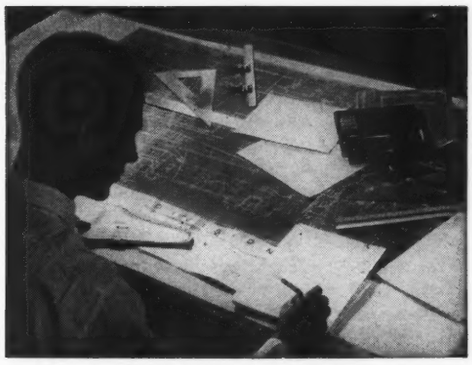


"Tailor Made"

YET STANDARDIZED!

Each Security Arch is "tailor made" to suit the individual class of power in which it must function. But so effectively is Security Arch Brick standardized that only six different Security Brick patterns are needed for more than 50% of the Security Arch Brick used.

This high standardization reflects the engineering and experience of the American Arch Company.

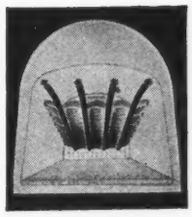
It simplifies the application of the brick arch and saves the stores department a vast amount of trouble.

This foresight of the American Arch Company in adhering to standards is but one of the many ways in which the American Arch Company is serving the railroads.

There's More to
SECURITY ARCHES
Than Just Brick

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists



AMERICAN ARCH CO.
INCORPORATED
60 EAST 42nd STREET, NEW YORK, N. Y.
Locomotive Combustion Specialists

more than six per cent of the total tonnage reported, showed a decrease of 4.3 per cent in May, as compared with April, and an increase of 0.2 per cent over May, 1940. Movement of new automobiles and trucks, constituting 5½ per cent of the total tonnage, increased 16.1 per cent over April and 44.4 per cent over May, 1940. Haulers of iron and steel products reported almost four per cent of the total tonnage. The volume of these commodities showed a decrease of 4.4 per cent under April, but increased 29.2 per cent over May of last year. A little more than five per cent of the total tonnage reported was miscellaneous commodities, including tobacco, milk, textile products, building materials, coal, cement and household goods. Tonnage in this class increased 11.3 per cent over April and 34 per cent over the volume hauled in May, 1940.

Another Annual-Wage Figure From Retirement Board

Statistical compilations recently completed by the Railroad Retirement Board show that railroad employees, including 102,388 who had work in only one month and 129,927 who earned less than $50 during the year, had an average 1939 wage of $1,324. The report is like the Board's compilation of 1937 data issued in the fall of 1938, and used by railroad labor organizations in their successful fight against the proposed 15 per cent wage cut; and it has been hailed by "Labor" as "Powerful ammunition for the Standard Railroad Labor Organizations to use in their drive" for increased wages.

No similar tabulations of 1938 data have been issued, but the present statement's prefatory notes say that a compilation for that year is "now in preparation." When the 1937 data were issued railroad men pointed out that the bulk of the aggregate payroll used in the Retirement Board tabulation went to employees who had some work in each of the year's 12 months, and that those are the ones who might properly be regarded as really attached to the industry. On that basis, the present compilation shows that 862,153 employees had some work in each of 1939's 12 months, and their average wage for the year was $1,844. That group received 87 per cent of the aggregate payroll entering Retirement Board's calculations. Furthermore, although it is a relatively minor factor, it is pointed out that the amount an individual earns over $300 a month does not enter the wages reported to the Retirement Board. The average compensation per employee for 1939 was given as $1,886 by Dr. Julius H. Parmelee, director of the Bureau of Railway Economics, in his "Review of Railway Operations in 1940" which appeared in the *Railway Age* of January 4.

The present compilation, entitled "Compensation, Service, and Age, Railroad Employees, 1939," is a voluminous document containing two sets of tables classified generally as "Wage and Service Tables" and "Age and Service Tables." There are 65 of the former showing the number of employees distributed by amount of credited compensation and number of months of service for the year. Eight are by class of employer; 15 show the data by occupational groups on Class I roads; and the remaining 42 cover the larger individual occupations on Class I roads, employees of the Railway Express Agency, and employees of the Pullman Company. The "Age and Service Tables" show the number of employees distributed by age groups and by number of service months.

As pointed out in *Railway Age* reports of the 1938 proceedings in connection with the proposed 15 per cent wage cut, the Retirement Board's compilation of the 1937 data gave railway labor an annual-wage figure which it liked for the purposes of that case. Recalling that situation, the June 24 issue of "Labor" from which the quotation given above was taken, also had this to say: "Like the similar report which the Board published on railroad pay in 1937, this one explodes the inflated 'average pay' figures which the carriers take out of the moth balls on all possible occasions, and will trot out again now that their employees are asking for wage increases."

Nevertheless, as noted in the *Railway Age* of October 15, 1938, page 557, one of labor's witnesses in the wage-cut proceeding—L. E. Keller, director of statistical and research work for the Brotherhood of Maintenance of Way Employees—admitted that the 1937 "average wage" figure of $1,101 gleaned from the Retirement Board's compilation was "too low."

Ickes Asks Greater Use of Tank Cars

In another direct effort to alleviate the impending shortage of petroleum products on the Atlantic seaboard, Harold L. Ickes, Petroleum Coordinator for National Defense, has asked the oil industry to utilize fully the Nation's railroad tank car capacity even though "tank car movement will in many ways be more expensive than movements by other means."

The Coordinator telegraphed his request to the various companies operating on the East Coast. Heretofore, the East Coast has received the bulk of its petroleum shipments by ocean tankers, the freight rates of which are lower than those of the railroads, Mr. Ickes pointed out.

It was suggested in the telegram that the oil companies might "find opportunities for minimizing the cost additions through the railroad's cooperation in the matter of special rates."

The Coordinator, in seeking by this third move to prevent a serious East Coast shortage, a probability created by the transfer of fifty tankers to the British shuttle service and a mounting consumption, is endeavoring to bring about increased deliveries by all available means, it was said. His first move resulted in an agreement between the Sun Oil Company and the Standard Oil Company of California for a rearrangement of tanker routes that will result in a 5,000,000 barrel increase annually in East Coast deliveries of petroleum products. In a second move, discussions are being held with representatives of a number of the major oil companies regarding construction of a proposed pipe line from Gulf fields to the Atlantic Seaboard.

Concurrently, legislation endorsed by the Coordinator to expedite such pipe line construction has been passed by the House of Representatives and is before the Senate. Other legislation similarly endorsed to permit coastwise tankers to carry more oil is progressing in the Congress.

"Increased efficiency in delivery of petroleum products by all agencies will," the Coordinator said, "result in bettering the East Coast situation somewhat. However, the problem is far from solution and more drastic steps may become necessary."

The Coordinator's telegram regarding railroad tank cars follows:

"In view of impending serious shortage of petroleum products on Atlantic Seaboard I direct to your attention there is apparent tankcar capacity not now utilized which might be immediately employed to relieve situation. In so doing I fully appreciate that tankcar movement will in many ways be more expensive than movement by other means. However, I am sure you will consider some sacrifice justified in the circumstances and you may find opportunities for minimizing cost additions through railroad's cooperation in matter of special rates. Suggest your company give immediate attention to possibilities of this greater use of tankcars and proceed as rapidly as possible with such plans as you are able to develop in view of cumulative effect of lost time. Would appreciate knowing within the week specifically what you consider possible of immediate accomplishment by your company."

Moving the I. C. C.

Facts and considerations in support of the view that it would not be in the public interest to move the Interstate Commerce Commission out of Washington, D. C., are understood to have been set forth in the commission's answer to Bureau of the Budget's recent inquiry in that connection. A similar reply is understood to have been made by the Railroad Retirement Board. The commission and the board were among several agencies which were asked to supply by June 20 data on how much Washington office space might become available if all or part of their activities were transferred elsewhere in order to make room for the federal government's expanding national-defense organizations.

The commission's answer was not made public, but Chairman Eastman expressed his personal views on the matter in an interview at Chicago on June 19. Mr. Eastman there said that it was not for the commission to say where it would operate; it could only point to difficulties of operating away from Washington. He went on to express his view that bodies like the commission should remain close to the seat of government, adding that if it were located outside the "neutral" Capital city there would be suggestions by those in other parts of the country that it was being influenced by sectional considerations. Moreover, the chairman also pointed out that the commission had always been disposed to decentralize its work for the convenience of those it served; and it now has approximately 800 persons in its field forces, and maintains accounting, inspection and motor carrier offices in many cities. Also, it follows the rule of holding hearings at points convenient for the interested parties.

Another moving difficulty which occur-

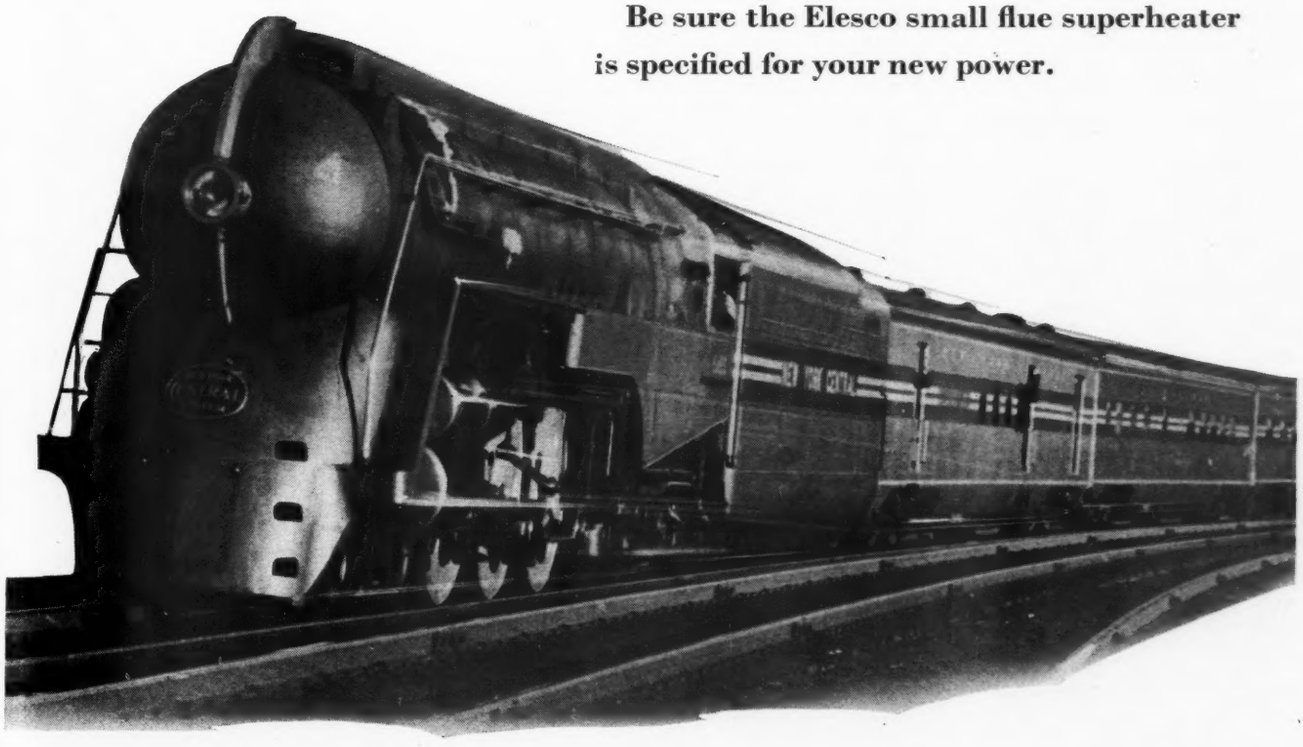
Continued on next left-hand page

Locomotive Efficiency Demands *High Superheat*

Cylinder efficiency increases as the degree of superheated steam increases.

The Elesco small flue superheater design as compared with the large flue design, provides not only additional superheating surface and higher superheat, but also effects an increase in boiler evaporative capacity . . . the combination of which is increased boiler horsepower and increased cylinder efficiency.

Be sure the Elesco small flue superheater is specified for your new power.



ELESCO

SUPERHEATERS • FEEDWATER HEATERS
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EXHAUST STEAM INJECTORS • PYROMETERS

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122 S. Michigan Ave. CHICAGO
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Montreal, Canada
THE SUPERHEATER COMPANY, LTD.

red to Mr. Eastman would arise, he said, from the fact that the move itself would take considerable time, and it would be attended by unavoidable disorganization which would delay important commission work about which there was already compiaint as to slowness. Finally, the chairman suggested that the commission would perhaps be about the most difficult agency to move, since it is the oldest of them all with a staff having deep roots in Washington.

As was noted in last week's issue, the Interstate Commerce Act provides that "the principal office of the commission shall be in the city of Washington where its general sessions shall be held;" and it it understood that the Bureau of the Budget concedes that Congress would have to act before the commission could be moved. President Roosevelt expressed a similar view at his June 17 press conference.

Like the commission, the Retirement Board did not make public its reply; but Chairman Murray W. Latimer this week pointed out how the Board has authority to execute long-term leases for office space. Thus Mr. Latimer, who has said that a move would be "calamitous," thinks that the Board is in a position to make advantageous arrangements to secure, if necessary, the erection of a building in the Washington area, but outside the congested zone. This, he added, would accommodate the Board without depriving anyone else of space.

Meanwhile Representative Sabath, who has been one of the Congressional promoters of the decentralization idea, has introduced another resolution on the matter. It is House Joint Resolution 198 to create a committee to investigate the feasibility of transferring bureaus and agencies from the District of Columbia. The committee would consist of three members of the Senate, three members of the House, the director of the Bureau of the Budget, the Co-ordinator of Defense Housing, and the Commissioner of Public Buildings. That the decentralization movement is not all talk was demonstrated by Secretary of Interior Ickes who has ordered the Grazing Service of the Interior Department moved to the west—either Denver, Colo., or Salt Lake City, Utah. Approximately 60 employees are affected, and the space vacated will be retained by Mr. Ickes in his recently-assumed role as Petroleum Co-ordinator for National Defense.

Operating Revenues and Operating Expenses of Class I Steam Railways

Compiled from 133 Monthly Reports of Revenues and Expenses Representing 137 Class I Steam Railways

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF APRIL, 1941 AND 1940

Item	United States		Eastern District		Southern District		Western District	
	1941	1940	1941	1940	1941	1940	1941	1940
Miles of road operated at close of month	232,252	232,975	57,237	57,390	44,180	44,342	130,835	131,243
Revenues:								
Freight	$305,230,456	$265,269,159	$129,770,495	$111,205,778	$51,547,096	$55,734,031	$123,912,865	$98,329,350
Passenger	38,348,263	29,955,986	19,669,487	16,154,036	7,528,591	4,936,195	11,150,185	8,865,755
Mail	8,821,838	8,160,593	3,293,931	3,142,384	1,516,978	1,421,884	4,010,929	3,596,325
Express	5,858,564	4,993,772	2,246,019	1,907,996	1,452,691	1,262,356	2,159,854	1,823,420
All other operating revenues	16,749,248	13,187,587	8,221,228	6,470,698	2,132,605	1,870,116	6,395,415	4,846,773
Railway operating revenues	375,008,369	321,567,097	163,201,160	138,880,892	64,177,961	65,224,582	147,629,248	117,461,623
Expenses:								
Maintenance of way and structures	45,461,554	39,665,922	17,286,316	14,810,635	8,229,564	7,651,946	19,945,674	17,203,341
Maintenance of equipment	74,863,857	65,267,825	33,316,138	28,043,455	14,256,212	13,230,764	27,291,507	23,993,606
Traffic	9,188,316	9,067,032	3,189,163	3,213,626	1,760,663	1,693,617	4,238,490	4,159,789
Transportation—Rail line	130,627,155	117,641,590	60,561,857	53,615,077	21,397,300	20,723,123	48,667,998	43,303,390
Transportation—Water line	522,501	527,131	.....	.....	.....	.....	522,501	527,131
Miscellaneous operations	3,499,080	3,007,189	1,524,616	1,316,682	583,854	498,128	1,385,610	1,192,379
General	11,073,839	10,963,247	4,352,618	4,292,636	2,183,754	2,124,564	4,537,467	4,546,047
Transportation for investment—Cr.	297,931	262,419	33,165	21,795	72,681	55,098	192,085	185,526
Railway operating expenses	274,938,371	245,877,517	120,197,543	105,270,316	48,343,666	45,867,044	106,397,162	94,740,157
Net revenue from railway operations	100,069,998	75,689,580	43,003,617	33,610,576	15,834,295	19,357,538	41,232,086	22,721,466
Railway tax accruals	36,546,224	30,727,479	15,840,370	12,958,265	7,448,673	6,860,948	13,257,181	10,908,266
Railway operating income	63,523,774	44,962,101	27,163,247	20,652,311	8,385,622	12,496,590	27,974,905	11,813,200
Equipment rents—Dr. balance	8,169,427	8,270,069	4,231,484	3,872,618	471,787	640,018	3,466,156	3,757,433
Joint facility rent—Dr. balance	2,785,466	2,571,509	1,548,971	1,386,249	321,590	309,154	914,905	876,106
Net railway operating income	52,568,881	34,120,523	21,382,792	15,393,444	7,592,245	11,547,418	23,593,844	7,179,661
Ratio of expenses to revenues (per cent)	73.3	76.5	73.6	75.8	75.3	70.3	72.1	80.7
Depreciation included in operating expenses	17,874,308	17,039,648	7,856,592	7,410,855	3,614,495	3,454,900	6,403,221	6,173,893
Pay roll taxes	10,357,368	9,238,961	4,574,178	4,005,970	1,775,771	1,704,160	4,007,419	3,528,831
All other taxes	26,188,856	21,488,518	11,266,192	8,952,295	5,672,902	5,156,788	9,249,762	7,379,435

FOR FOUR MONTHS ENDED WITH APRIL, 1941 AND 1940

Item								
Miles of road operated at close of month*	232,354	233,045	57,255	57,397	44,215	44,357	130,884	131,291
Revenues:								
Freight	$1,257,589,277	$1,072,797,421	$551,446,111	$463,031,149	$251,424,579	$227,583,572	$454,718,587	$382,182,700
Passenger	155,048,020	131,241,649	78,884,699	70,587,772	30,380,035	23,528,959	45,783,286	37,124,918
Mail	34,076,490	32,445,219	12,718,329	12,406,569	5,973,132	5,667,011	15,385,029	14,371,639
Express	18,143,738	17,021,163	6,997,489	6,476,301	4,213,144	4,019,991	6,933,105	6,524,871
All other operating revenues	62,257,695	54,427,407	31,087,458	27,046,312	8,411,361	7,514,316	22,758,876	19,866,779
Railway operating revenues	1,527,115,220	1,307,932,859	681,134,086	579,548,103	300,402,251	268,313,849	545,578,883	460,070,907
Expenses:								
Maintenance of way and structures	159,512,524	143,217,486	64,614,097	55,955,699	31,306,895	29,168,020	63,591,532	58,093,767
Maintenance of equipment	298,916,128	265,899,017	138,642,925	119,300,565	56,453,945	52,932,327	103,819,528	93,666,125
Traffic	35,883,113	35,456,120	12,649,982	12,630,681	7,211,620	7,014,401	16,021,511	15,811,038
Transportation—Rail line	529,318,843	490,516,849	245,990,442	226,346,917	91,311,297	86,492,371	192,017,104	177,677,561
Transportation—Water line	2,195,382	2,080,895	.....	.....	.....	.....	2,195,382	2,080,895
Miscellaneous operations	13,996,078	12,787,407	6,055,373	5,583,342	2,461,718	2,276,948	5,478,987	4,927,117
General	43,871,983	43,558,192	17,368,651	17,260,558	8,621,727	8,418,592	17,881,605	17,879,042
Transportation for investment—Cr.	868,062	1,027,907	122,031	224,756	230,270	215,567	515,761	587,584
Railway operating expenses	1,082,825,989	992,488,059	485,199,439	436,853,006	197,136,932	186,087,092	400,489,618	369,547,961
Net revenue from railway operations	444,289,231	315,444,800	195,934,647	142,695,097	103,265,319	82,226,757	145,089,265	90,522,946
Railway tax accruals	147,825,333	122,242,627	63,961,282	51,309,148	35,549,707	27,568,370	48,314,344	43,365,109
Railway operating income	296,463,898	193,202,173	131,973,365	91,385,949	67,715,612	54,658,387	96,774,921	47,157,837
Equipment rents—Dr. balance	31,444,204	32,649,530	15,559,106	15,497,506	1,633,198	2,070,645	14,251,900	15,081,379
Joint facility rent—Dr. balance	10,947,594	10,528,553	6,004,500	5,857,934	1,152,041	929,100	3,791,053	3,741,519
Net railway operating income	254,072,100	150,024,090	110,409,759	70,030,509	64,930,373	51,658,642	78,731,968	28,334,939
Ratio of expenses to revenues (per cent)	70.9	75.9	71.2	75.4	65.6	69.4	73.4	80.3
Depreciation included in operating expenses	71,030,644	67,764,122	31,136,205	29,360,462	14,376,890	13,727,522	25,517,549	24,676,138
Pay roll taxes	40,350,904	37,340,216	17,977,212	16,531,446	7,188,202	6,888,556	15,185,490	13,920,214
All other taxes	107,474,429	84,902,411	45,984,070	34,777,702	28,361,505	20,679,814	33,128,854	29,444,895

* Represents an average of the mileage reported at the close of each month within the period.

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

Supply Trade

Robert E. Dingman has been appointed manager of railway sales of the **Flintkote Company,** with headquarters at 30 Rockefeller Plaza, N. Y.

A. W. Parker, a consultant on engineering matters in the advertising department of the **Worthington Pump and Machinery Corporation,** Harrison, N. J., has retired after 54 years of continuous service.

E. C. Gunther, who has been appointed district manager, midwest territory, of the **Duff-Norton Manufacturing Company,** with headquarters at Chicago, as reported in the *Railway Age* of June 14, was born in Chicago on February 5, 1899. He entered the employ of the Chicago, Burlington & Quincy in 1916 and since has held the

E. C. Gunther

positions of bookkeeper, tracing clerk, scrap clerk and buyer in the purchasing department.

William D. McCarley has been appointed Pacific Coast representative of the locomotive equipment division of **Manning, Maxwell & Moore, Inc.,** with headquarters in San Francisco. He replaces **Newton B. Selover,** who has been transferred to the Chicago district. Mr. McCarley had been chief electrician of the Eastern division of the Western Pacific for the past five years and prior thereto was with the Denver & Rio Grande Western shops.

OBITUARY

Robert L. Cairncross, district sales manager of the track spring washer division of the National Lock Washer Company, Newark, N. J., with headquarters at Chicago, who died in Tucson, Ariz., on June 13 as reported in the *Railway Age* of June 21, was born at Shakespeare, Ont., on December 28, 1868. He began his railroad career on the Canadian Pacific in British Columbia and later served on the Gulf, Colorado & Santa Fe as a conductor and for a short time as a trainmaster on the Beaumont division. In 1909 he left the G. C. & S. F. to enter the employ of the Handlan-Buck Manufacturing Company, St. Louis, Mo., and in 1914 he went with the National Lock Washer Company in the track spring washer division at

Robert L. Cairncross

Chicago. Mr. Cairncross was later advanced to district sales manager of that division, which position he held at the time of his death.

Dudley Brewster Bullard, vice-president of the Bullard Company of Bridgeport, Conn., whose death June 10 was reported in the *Railway Age* of June 14 received his early engineering education as an apprentice in the plant of his father, who founded the Bridgeport Machine Tool Works which later became the Bullard Company. After several years spent in the machine shop he was advanced to the drafting room and subsequently appointed superintendent of the plant. From this position he became chief engineer and finally vice-president in charge of engineering. Mr. Bullard was a member of the A. S. M. E. and had served as chairman of the Bridge-

Dudley Brewster Bullard

port chapter from 1931 to 1932. He was also a member of the Bridgeport Engineers' Club and its president in 1930.

TRADE PUBLICATION

WHEEL SHOP PRACTICE.—An illustrated booklet with twenty-eight 5-in. by 7½-in. pages covering this subject is now being distributed by the Association of Manufacturers of Chilled Car Wheels, 230 Park avenue, New York; 445 N. Sacramento Blvd., Chicago, to railway wheel shop supervisors and machine operators who want it. The book contains detailed instructions for wheel-shop machine-tool practice, checking and correcting machine equipment, and correct methods to use in mounting wheels. It represents the results of visits to over 250 wheel shops and an analysis of replies made by 87 shops to a series of 32 questions on the subject.

Equipment and Supplies

LOCOMOTIVES

The fifteen steam freight locomotives recently ordered by the New York, Chicago & St. Louis from the Lima Locomotive Works were of the 2-8-4 type—and not the 2-8-2 type as reported in the *Railway Age* of June 14.

THE FLORIDA EAST COAST has ordered three Diesel-electric passenger locomotives of 2,000 hp. each from the Electro-Motive Corporation. The expected purchase of several Diesel locomotives by this company was reported in the *Railway Age* of June 21.

THE NEW YORK, SUSQUEHANNA & WESTERN has ordered two Diesel-electric locomotives of 1,000 hp. each from the American Locomotive Company and has also received court authority for the purchase of an additional six units of the same type. This company was reported as intending to shortly place orders for the above equipment in the *Railway Age* of June 14.

FREIGHT CARS

C. & O. Buys 2,000 Freight Cars

The Chesapeake & Ohio has placed orders for a total of 2,000 freight cars, allocating 1,000 hopper cars of 50 tons' capacity to the American Car & Foundry Co. and 1,000 box cars of 50 tons' capacity to the Pullman-Standard Car Manufacturing Company. This company was reported in the market for this equipment in the *Railway Age* of June 21.

THE UNION PACIFIC has ordered 2,500 underframes from the Mt. Vernon Car Manufacturing Company.

THE ARGENTINE STATE RAILWAYS are reported to be in the market for 375 box cars of 30 tons' capacity.

THE CAMBRIA & INDIANA is reported to have ordered 400 hopper cars from the Bethlehem Steel Company.

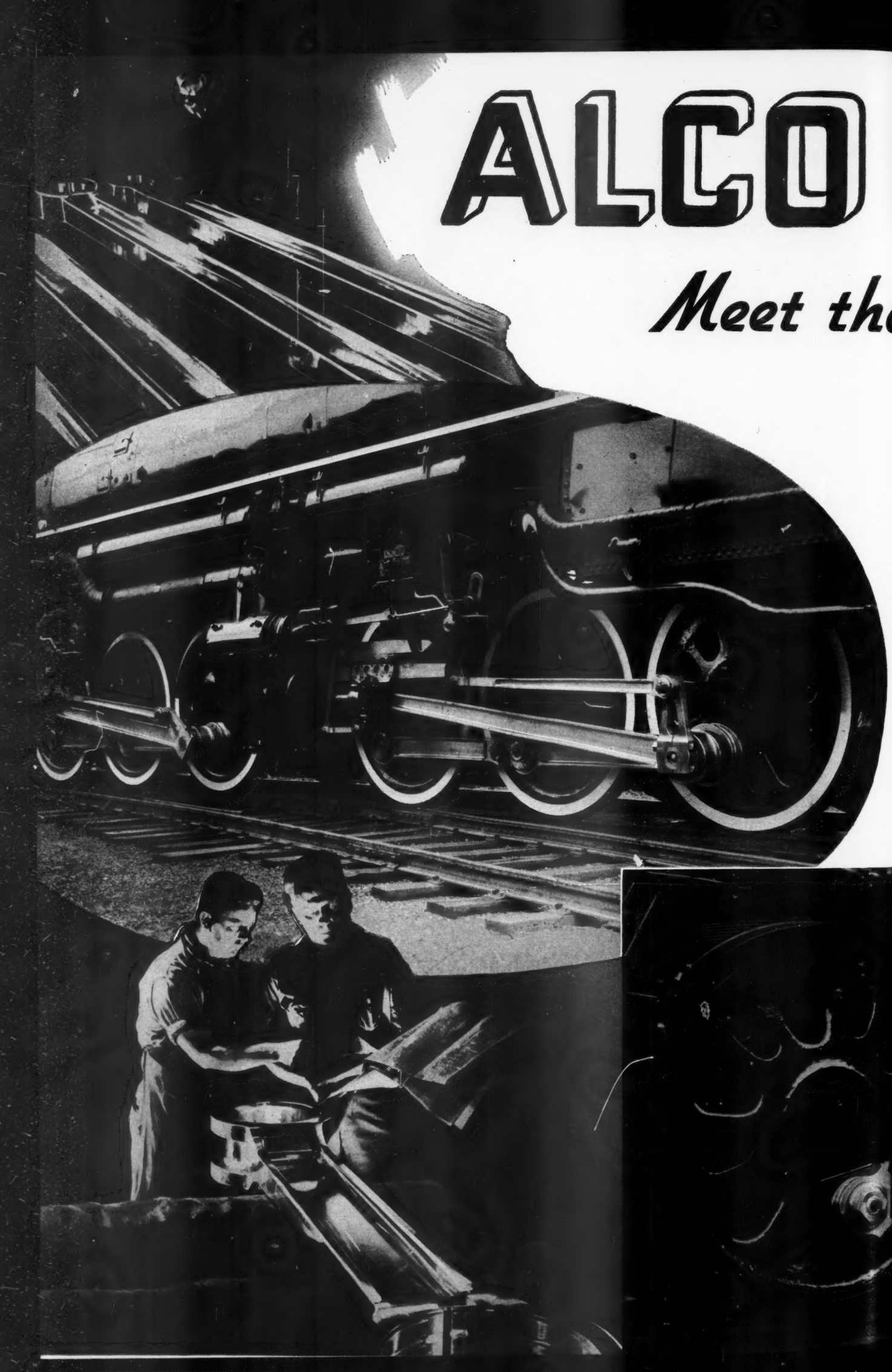
THE NEW YORK, CHICAGO & ST. LOUIS is considering the purchase of 1,000 box cars.

THE READING is reported to have ordered 500 gondola cars of 70 tons' capacity

Continued on second left-hand page

ALCO

Meet the



FORGINGS-

e Most Rigid Requirement of

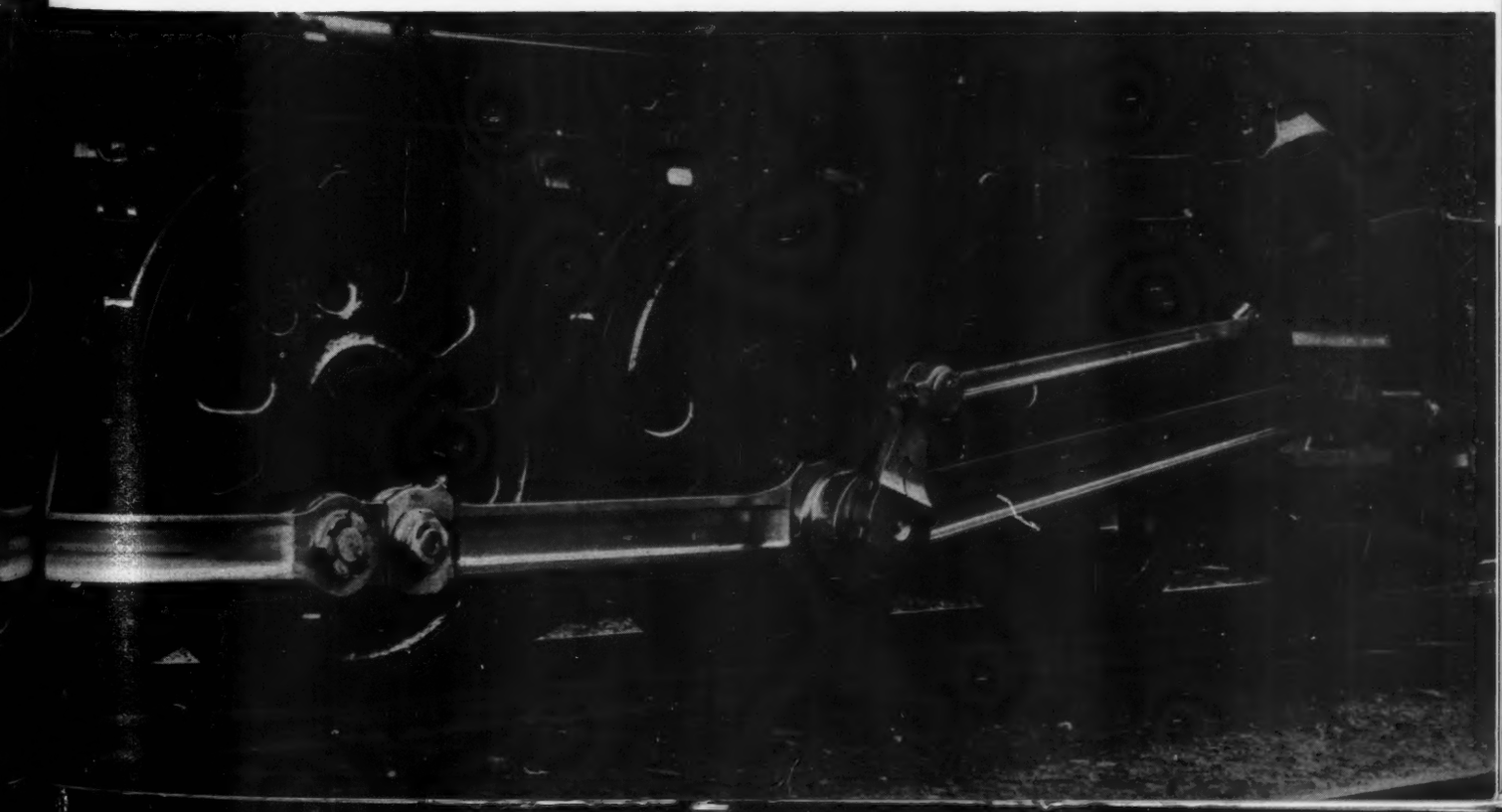
HIGH SPEED SERVICE

ALCO quality forgings have played a major role in the attainment of a new peak in locomotive performance. Alco light weight reciprocating parts not only protect the locomotive investment — but minimize rail pounds at the higher speeds and produce important economies in track and locomotive maintenance . . . Their unsurpassed strength and unfailing performance insures the continued serviceability and high availability of the locomotives in this heavy high speed service.

The manufacture of high grade steel forgings is and always has been one of Alco's outstanding specialties. And now with plant facilities modernized to produce the finest light weight alloy steel forgings, Alco is in a position to serve you better than ever before.

AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET **NEW YORK, N. Y.**



from the Bethlehem Steel Co. This company was reported as negotiating with the Bethlehem Steel Co. for the purchase of this equipment in the *Railway Age* of June 7.

THE CENTRAL OF GEORGIA has ordered 150 50-ton automobile cars from the American Car & Foundry Company and 50 50-ton box cars from the Pullman-Standard Car Manufacturing Company. Inquiry for this equipment was reported in the *Railway Age* of May 31.

THE ST. LOUIS SOUTHWESTERN has asked the district court for permission to build 500 freight cars in its own shops at Pine Bluff, Ark., at a cost of $1,748,000.

THE NEW YORK, CHICAGO & ST. LOUIS is reported to have ordered 1,000 box cars from the General American Transportation Corporation.

THE LITCHFIELD & MADISON has on order with the General American Transportation Corporation 50 hopper cars not previously reported by the *Railway Age*.

THE UNITED STATES ARMY, Purchasing and Contracting Officer, Quartermaster Corps, Fort Benning, Ga., is asking for bids on 12 36-in. gage motor cars and two trailers—Inv. 148-563.

THE NORFOLK & WESTERN has ordered 25 steel gondola cars of 70 tons' capacity from the Ralston Steel Car Company. The inquiry for this equipment was reported in the *Railway Age* of May 3.

THE CHICAGO, ROCK ISLAND & PACIFIC has placed an order for 200 gondola cars with the American Car & Foundry Co. The inquiry for this equipment was reported in the *Railway Age* of May 31.

THE AKRON, CANTON & YOUNGSTOWN has ordered 100 all steel, center-dump hopper cars of 50 tons' capacity and 30 gondola cars of 70 tons' capacity from the Bethlehem Steel Co. Inquiries for this equipment were reported in the May 31 and June 14 issues of the *Railway Age*.

PASSENGER CARS

Santa Fe Buys 37 Passenger Cars

The Atchison, Topeka & Santa Fe has placed an order for 37 passenger-train cars with the Edward G. Budd Manufacturing Co. These are in addition to 22 cars purchased from this company in April as reported in the *Railway Age* of April 14. The new order includes the following cars:

7 storage-mail
8 dining
6 club-lounge
16 chair

Pennsylvania and Florida East Coast Order Passenger Cars

The Pennsylvania has ordered 12 cars and the Florida East Coast six cars of the light-weight streamlined type as their share in an expansion of the through passenger service from New York to Florida which these companies operate in conjunction with the Atlantic Coast Line. An order for 16 cars by the Atlantic Coast Line was reported in the *Railway Age* of June 14. The cars, which will be air-conditioned, will be built by the Edward G. Budd Manufacturing Company. The orders include the following:

Pennsylvania
12 coach

Florida East Coast
3 coach
1 observation
1 dining
1 passenger-baggage

Atlantic Coast Line
8 coach
2 observation
3 dining
3 passenger-baggage

IRON AND STEEL

THE CENTRAL OF NEW JERSEY has ordered 5,000 tons of 130-lb. rail from the Bethlehem Steel Co.

THE CHESAPEAKE & OHIO has ordered 38,041 tons of rails, placing 20,162 tons with the Carnegie-Illinois Steel Corp.; 14,075 tons with the Inland Steel Co.; and 3,804 tons with the Bethlehem Steel Co.

THE NEW YORK, CHICAGO & ST. LOUIS has ordered 11,000 tons of rails, placing 7,150 tons with the Carnegie-Illinois Steel Corp.; 1,980 tons with the Inland Steel Co.; and 1,870 tons with the Bethlehem Steel Co.

THE PERE MARQUETTE has ordered 8,000 tons of rails, placing 2,475 tons with the Carnegie-Illinois Steel Corp.; 2,200 tons with the Inland Steel Co.; 825 tons with the Bethlehem Steel Co.; and 2,500 tons for use on its Canadian line from the Algoma Steel Corp.

THE PENNSYLVANIA has placed orders for 150,000 tons of new steel rail, marking the largest rail purchase made by this road since 1931. The rail to be rolled under these orders will lay almost 700 miles of track. It is anticipated that all the rail in the new orders will be placed in track in 1942, doubling the current year's program of 75,000 tons of new laid rail. The Carnegie-Illinois Steel Corporation will roll 75,000 tons under the orders just placed; the Bethlehem Steel Co., 66,000 tons, and the Inland Steel Co., 9,000 tons. The new rail will include special 152 lb. extra heavy section, as well as standard 131-lb. main line section rail.

SIGNALING

THE ILLINOIS COMMERCE COMMISSION on June 11 directed the Alton and the Atchison, Topeka & Santa Fe to install protective devices at grade crossings formed by their tracks with Smith's Bridge road and Blodgett road and directed the Alton to take a similar step at its crossing with Hoff road, all of these grade crossings being located within the Kankakee Ordnance Works of the U. S. War Department in Will county. The war department is to reimburse the railroads for the actual initial cost of the improvements in an amount not to exceed $33,500, while the railroads are to bear the expense of operating and maintaining the devices. Automatic flashing light signals, combined with short arm gates, are to be installed at each of the crossings.

THE NEW YORK & LONG BRANCH (operated jointly by the Pennsylvania and Central of New Jersey) is installing an electro-pneumatic interlocking at the junction of its line with the Pennsylvania at South Amboy, N. J., involving a twenty-three lever Model 14 interlocking machine. Electro-pneumatic switch and lock movements (A-5) with "CP" cutoff valves are being installed. All relays in the tower will be the PN-50 plug-in type, and a twenty-three section illuminated track diagram showing the complete interlocking layout is to be installed immediately above the interlocking machine. The materials for this plant are being furnished by the Union Switch & Signal Co., with the field installation to be carried out by the railroad's own forces.

THE UNION SWITCH & SIGNAL COMPANY has been awarded a contract by the Hunkin-Conkey Construction Company of Cleveland, Ohio, for all the materials required for a centralized traffic control system to be installed within the new Ravenna, Ohio, Ordnance Plant. The C. T. C. type control machine will handle the signaling arrangement contemplated for the entire 100-mile plant trackage. The levers of this machine with their indication lights will be mounted directly on the track diagram face plate of the machine. All functions in the vicinity of the tower, located near the receiving yard at one end of the huge plant, will be handled by direct-wire control, while the more distant controlled switches and signals will operate under the code system. Alternating current, dual-control, Type M-22-B switch movements, color-light signals, and alternating current rectified d-c. track circuits will be installed, with all wiring to be in underground cable. A telephone system will be superimposed on the C. T. C. system control wires. The relay and instrument housings are being factory wired, with the field installation work to be carried out by the forces of the plant contractor.

MOTOR VEHICLES

THE SAN DIEGO ELECTRIC has ordered 13 36-passenger street car type motor coaches from the a. c. f. Motors Company.

THE NORFOLK SOUTHERN BUS CORPORATION has ordered one motor coach from the a. c. f. Motors Company.

THE SANTA FE TRAIL TRANSPORTATION COMPANY has ordered four 37-passenger air-conditioned parlor-car type motor coaches from the a. c. f. Motors Company.

THE BURLINGTON TRAILWAYS has ordered 16 33-passenger air-conditioned buses from the American Car & Foundry Co. for delivery next spring.

THE SOUTHEASTERN GREYHOUND LINES has ordered six 33-passenger parlor-car type motor coaches from the a. c. f. Motors Company.

Construction

BALTIMORE & OHIO.—This company has awarded contracts to the Bates & Rogers Construction Corporation of Chicago for a bridge extension, grading and drainage in connection with the construction of a railroad sidetrack to the Ordnance Plant at Ravenna, Ohio, at estimated cost of $32,000, and to George Vang, Inc., of Pittsburgh, Pa. for the reconstruction of railroad facilities from Loop, Pa., to Smicksburg, at an estimated cost of $218,000.

CANADIAN PACIFIC.—A contract on a cost plus basis has been awarded to C. M. Miners Construction Company, Ltd., Saskatoon, Sask., for the installation of a 90-ft. turntable at Sutherland, Sask., which will replace a 70-ft. turntable.

CHATTAHOOCHEE VALLEY RAILWAY.—A contract has been awarded the Ross and White Company, Chicago, for a Red Devil automatic locomotive coaler which will be used in connection with a 50-ton storage unloading hopper at West Point, Ga.

CHICAGO, ROCK ISLAND & PACIFIC.—The Arkansas State Highway Commission has awarded a contract amounting to $141,728 to J. P. McNulty, Pine Bluff, Ark., for the construction of a steel and concrete highway overpass over the Rock Island tracks near the southeast edge of Little Rock, Ark. The structure, which will provide access to an airport, will be 613 ft. in length and will provide a roadway 28 ft. wide. Also included in the contract is 0.4 mile of paving on the approaches to the bridge.

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—A contract has been awarded the Ogle Construction Company, Chicago, for the replacement of a timber coal shed and trestle at Sioux City, Iowa, with a 250-ton reinforced concrete coaling station serving two tracks. The cost of the work will be approximately $24,000.

NEW YORK CENTRAL.—Five stalls of the enginehouse on the Big Four at Bellefontaine, Ohio, will be extended to accommodate the installation of a 100-ton and a 50-ton drop tables, and a monorail crane. The contract for the enginehouse extension has been awarded the Walsh Construction Company, and for the drop tables has been awarded the Whiting Corporation. The cost of the project, including sewer and water line changes and a fan and heater room, is estimated at $102,000.

NORTHERN PACIFIC.—A contract has been awarded the J. W. Bailey Construction Company, Seattle, Wash., for the construction of a three-track wood frame rectangular engine house with a machine bay, a wood frame office and store building and a concrete cinder pit at Easton, Wash. In connection with this work, track rearrangements and changes to water facilities will be completed by company forces.

PERE MARQUETTE.—A contract has been awarded the Ross and White Company, Chicago, for a 200-ton capacity two-track automatic electric coaling station, a two-track N. & W. type locomotive cinder plant, and a concrete sand storage and drying plant to be located at St. Thomas, Ont.

PENNSYLVANIA. — This company has awarded a contract to Johnson & Morris, Inc., of New York for the installation of air conditioning to serve certain concession space in the Pennsylvania Station, New York.

ST. LOUIS-SAN FRANCISCO.—The U. S. Engineer Office at Denison, Tex., has awarded a contract amounting to $648,924 to the Union Construction Company and Paul B. Reis, Des Moines, Iowa, for the construction of the substructure of the Washita river and Rock creek bridges on the relocation of the Frisco between Liggett, Okla., and Platter, occasioned by the construction of the Denison dam on the Red river near Denison, Tex. The substructure of the Washita river bridge will consist of one abutment, 18 towers of two bents each, 31 single bents and two piers for the main span across the river. The substructure of the Rock creek bridge will consist of three towers of two bents each and six single bents. The principal quantities for this work consist of 17,410 cu. yd. of foundation excavation, driving 13,330 lin. ft. of concrete piling, driving 117,100 lin. ft. of untreated piling, placing 16,938 cu. yd. of concrete and placing 1,719 tons of reinforcing steel.

The Frisco will be relocated at two points; approximately 11.6 miles of the main line between Liggett and Platter, and approximately 4.1 miles of a branch line between Lakeside, Okla., and Mead.

SAVANNAH & ATLANTA.—Sealed proposals will be received by the State Highway Board of Georgia, 2 Capitol Square, Atlanta, Ga., until June 27, for furnishing all labor, material and equipment necessary for the construction of a highway crossing signal installation, at the Savannah & Atlanta at Liberty Street in Waynesboro on the Waynesboro-Augusta Railroad, otherwise known as Federal Aid Grade Crossing Project FAGM 472-C (2) ON in Burke county. The work will be let in one contract.

THE UNITED STATES ENGINEER OFFICE, Post Office Building, Baltimore, Md., is asking for bids, June 20, for the construction of necessary roads and railroads at the U. S. Army Air Depot, Middletown, Pa.

THE UNITED STATES ARMY, Engineers Office, Post Office Building, Sacramento, Cal., is asking for bids for the construction of a railroad spur and appurtenant facilities at McClellan Field—Inv. 283.

THE UNITED STATES ARMY, Constructing Quartermaster, Savanna Ordnance Depot, Proving Ground, Ill., is asking for bids for the construction of a standard gauge railroad track—Inv. 6579-57.

TREMONT & GULF.—This company has asked the Interstate Commerce Commission for authority to extend its operations some 26 miles in Ouachita Parish, La., by constructing 9.5 miles of new line and leasing 17 miles from the Brown Paper Mill Company. The new operation will extend from Luna, La., to West Monroe.

Financial

ALABAMA & FLORIDA.—*Abandonment.*—This company would be authorized to abandon its entire line extending from Cowarts, Ala., to Greenwood, Fla., 29 miles, if Division 4 of the Interstate Commerce Commission adopts a recommended report of its Examiner A. G. Nye.

ATCHISON, TOPEKA & SANTA FE.—*Abandonment by the Oil Fields & Santa Fe.*—The Oil Fields & Santa Fe and the Atchison, Topeka & Santa Fe, respectively, have been authorized by Division 4 of the Interstate Commerce Commission to abandon a line and the operation thereof, extending from Frey, Okla., northerly to the end of the line near Oilton, 4.2 miles.

Purchase and Dissolution of Wholly-owned Subsidiaries.—This company has asked the Interstate Commerce Commission for authority to purchase and dissolve the corporate structures of four of its wholly-owned subsidiaries, the Oil Fields & Santa Fe, the Buffalo Northwestern, the Kansas City, Mexico & Orient, and the Osage County & Santa Fe.

Under the proposed plan of corporate simplification the following shares of stock and bonds will be surrendered to the subsidiaries by the parent company before the dissolution takes place: Osage County & Santa Fe, 9,995 shares of capital stock, $1,200,000 of series A first mortgage bonds and $1,800,000 of series B first mortgage bonds; Buffalo Northwestern, 995 shares of capital stock, $1,200,000 of general mortgage, series A bonds, and $202,000 of general mortgage, series B bonds; Kansas City, Mexico & Orient, 55,000 shares of capital stock and $2,498,440 of first mortgage bonds; and Oil Fields & Santa Fe, 995 shares of capital stock and $805,051 of series A, first mortgage bonds.

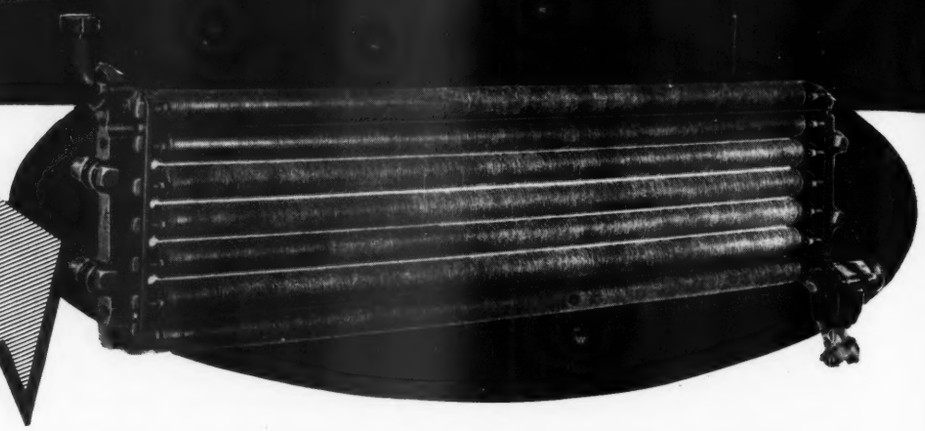
ATCHISON, TOPEKA & SANTA FE.—*Abandonment by the Oklahoma Central.*—The Oklahoma Central and the Atchison, Topeka & Santa Fe, respectively, have asked the Interstate Commerce Commission for authority to abandon a line known as the Chickasha District and extending from Purcell, Okla., to Chickasha, 41.2 miles.

CENTRAL OF GEORGIA.—*Equipment Trust Certificates.*—The trustees of this company have asked the Interstate Commerce Commission for authority to assume liability for $1,400,000 of equipment trust certificates issued July 1, 1937, the payment of which had previously been guaranteed by the receiver of the road. The application was made necessary by virtue of the fact that the road had previously been in receivership, but recently has been transferred to the section 77 type of reorganization.

CHARLES CITY WESTERN.—*Securities.*—This company has been granted authority by Division 4 of the Interstate Commerce Commission to (1) issue $100,000 of promissory notes and to use $80,000 of the proceeds to pay off a loan of a like amount from the Reconstruction Finance Corporation, (2) extend from July 1, 1941, to July 1, 1951, the date of maturity of $350,000

(*News continued on page 1207*)

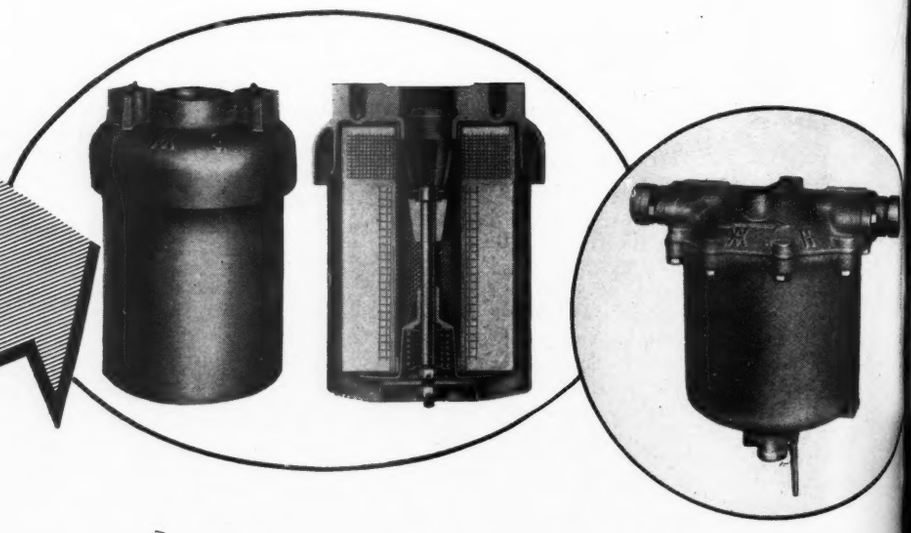
★ WAYS and MEANS to *Maintain the Integrity* of BRAKE PERFORMANCE



★ Dry AIR

AFTERCOOLER

The most effective means yet devised for removing moisture from the air supply is our compact radiator type Aftercooler, having automatic drain valve that ejects condensation each time the compressor governor operates. Thus, only dry air can reach the several brake devices, which helps immeasurably in maintaining functional reliability of the whole system.

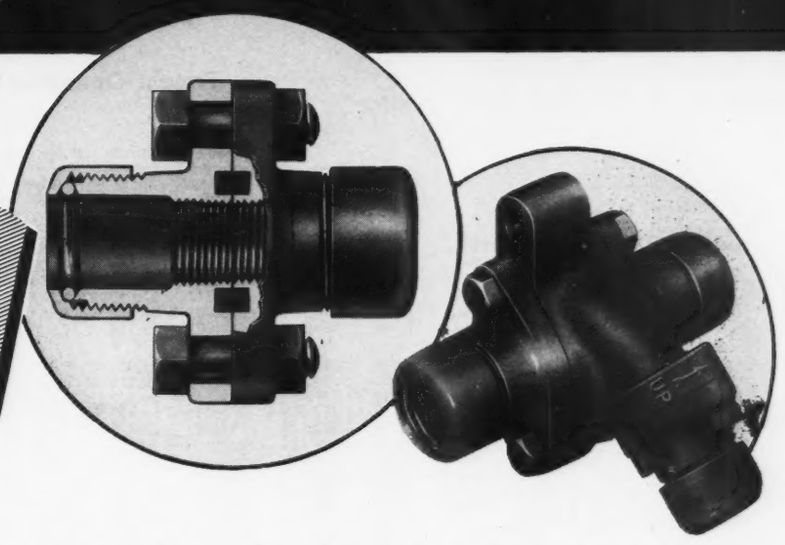


★ Clean AIR

Cartridge Type FILTERS

Remarkably efficient in providing clean air for brake devices, these Filters are used on the compressor inlet, main reservoir pipe, governor connections, and in the brake pipe passage of valves. (Brake cylinders are further protected by a felt seal and breather strainer at the non-pressure end). Particularly noteworthy have been the results with a filter on the compressor — unfailing service continuously between locomotive shoppings.

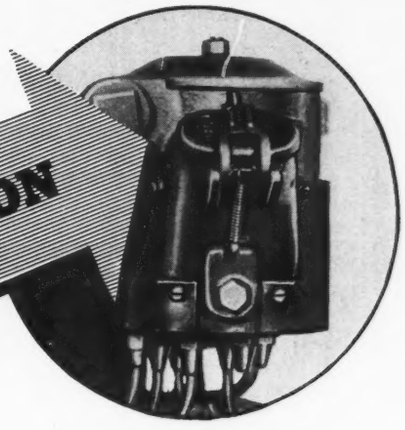
★ Air-tight JOINTS



WABCOTITE Fittings

Leak-proof, non-breakable pipe joints on valve devices, main reservoirs, tees, elbows, and unions, are provided by Wabcotite Fittings. They save air, help definitely to perpetuate proper brake functioning, and require no maintenance.

★ Proper LUBRICATION

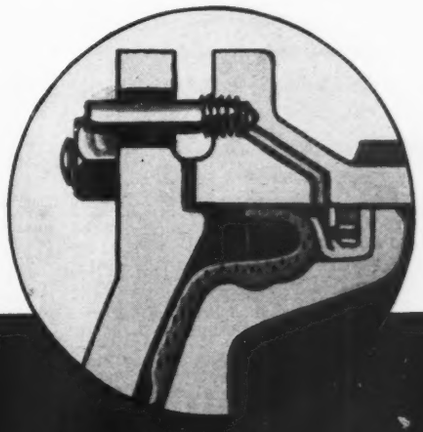


for COMPRESSORS

Our mechanical Lubricator injects minute quantities of oil to the air compressor, positively and regularly. Moving parts are thus kept in working order, passages open, rings free, valves tight, and wear at a minimum. This condition materially lengthens the uninterrupted service life of a compressor and drastically cuts the cost of upkeep.

for CYLINDERS

In the cylinder piston is a groove packed with lubricant that holds its body and does not disintegrate. A saturated felt swab distributes grease over the cylinder wall with each piston movement. This method of lubrication keeps the cylinder in good condition and helps to extend maintenance-free life of the equipment.



WESTINGHOUSE... AIR BRAKE COMPANY *Wilmerding, Pa.*

★ All devices illustrated — fundamental parts of modern equipments — have proved invaluable in preserving the integrity of brake performance, and reducing maintenance costs, which contribute to transportation efficiency. We strongly recommend that they be made available for equipments already in service by suitable conversion. Such procedure will be a sure paying investment.

Freight Operating Statistics of Large Steam Railways—Selected

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross excluding locomotives and tenders	Ton-miles (*thousands*): Net revenue and non-revenue	Number of road locomotives on line: Serviceable: Not stored	Serviceable: Stored	Unserviceable	Per cent unserviceable
New England Region:												
Boston & Albany 1941	362	150,855	157,617	11,425	3,462	64.9	198,526	69,813	60	...	28	31.8
1940	362	124,879	128,872	9,108	2,802	65.5	156,272	52,557	61	...	25	29.1
Boston & Maine 1941	1,894	309,633	350,421	28,111	11,764	68.1	662,341	239,378	131	...	39	22.9
1940	1,892	278,778	310,817	22,913	9,507	67.0	547,268	196,598	124	...	51	29.1
N. Y., New Hav. & Hartf.† .. 1941	1,829	410,757	512,401	35,330	14,865	66.3	816,684	291,003	202	1	50	22.6
1940	1,849	326,762	409,902	29,714	11,626	64.7	647,452	228,786	178	15	54	22.2
Great Lakes Region:												
Delaware & Hudson 1941	849	231,521	268,820	32,050	8,908	64.2	554,928	239,849	122	51	73	29.7
1940	846	230,810	307,920	32,188	7,607	62.2	489,391	227,770	121	41	78	32.5
Del., Lack. & Western 1941	983	357,495	408,245	55,685	14,053	69.4	804,867	314,115	143	2	68	31.9
1940	983	352,588	397,206	53,617	12,232	65.6	727,900	280,827	140	4	61	29.8
Erie (incl. Chi. & Erie)‡ 1941	2,257	723,174	765,680	43,391	31,842	67.5	1,859,294	695,009	244	19	162	38.1
1940	2,268	613,921	643,820	36,625	27,308	64.8	1,655,438	616,071	209	44	177	41.2
Grand Trunk Western 1941	1,023	288,954	290,591	2,114	8,735	62.7	531,963	181,733	74	...	20	21.3
1940	1,023	255,720	258,592	1,502	7,378	60.3	466,579	161,014	74	1	24	24.2
Lehigh Valley 1941	1,252	350,047	379,265	58,816	14,193	68.3	858,090	360,067	135	2	46	25.1
1940	1,265	320,058	348,827	49,224	11,840	63.8	745,483	300,189	133	...	87	39.5
New York Central 1941	10,522	2,755,072	2,861,869	154,857	93,193	61.4	5,812,848	2,190,410	934	141	322	23.0
1940	10,565	2,569,951	2,713,537	160,605	84,257	58.6	5,689,579	2,279,574	856	173	342	24.9
N. Y., Chicago & St. Louis... 1941	1,672	566,916	574,635	7,413	21,314	66.1	1,257,985	463,632	133	9	21	12.9
1940	1,672	482,543	490,556	5,938	16,974	62.1	1,035,834	371,164	128	12	26	15.7
Pere Marquette 1941	2,068	387,795	403,071	9,810	11,149	63.7	680,792	247,937	125	...	30	19.4
1940	2,080	367,633	376,081	8,237	10,158	60.9	655,861	242,582	120	1	39	24.4
Pittsburgh & Lake Erie 1941	233	68,994	71,730	.....	2,273	60.6	177,827	92,515	34	14	15	23.8
1940	233	67,566	69,868	.....	2,524	58.2	221,786	123,301	30	22	19	26.8
Wabash* 1941	2,397	603,307	618,234	12,204	20,197	67.3	1,180,808	430,647	146	8	108	41.2
1940	2,397	548,959	561,153	11,437	17,021	62.5	1,028,153	347,295	149	15	105	39.0
Central, Eastern Region:												
Baltimore & Ohio 1941	6,246	1,538,142	1,875,982	188,342	48,790	64.7	3,107,238	1,300,370	718	167	253	22.2
1940	6,262	1,401,470	1,725,707	186,258	43,243	61.2	2,976,010	1,305,326	639	130	437	36.2
Central of New Jersey† 1941	680	181,950	207,108	40,770	5,726	62.3	367,876	167,074	86	6	55	37.4
1940	679	167,043	186,481	31,996	5,011	59.2	356,440	166,773	79	7	72	45.6
Chicago & Eastern Illinois.... 1941	925	178,975	179,712	3,070	4,618	67.3	273,791	109,791	59	4	28	30.8
1940	925	166,325	166,759	2,903	4,050	63.8	250,520	97,470	56	5	29	32.2
Elgin, Joliet & Eastern 1941	390	108,954	110,224	1,441	2,782	58.7	208,976	97,695	60	1	13	17.6
1940	390	90,918	92,163	1,361	2,248	60.5	168,325	80,966	51	3	23	29.9
Long Island 1941	375	28,291	29,459	17,689	284	52.7	20,841	7,481	36	4	8	16.7
1940	375	25,952	27,332	16,462	277	52.2	20,973	8,058	32	7	9	18.8
Pennsylvania System 1941	9,960	3,328,012	3,907,091	500,118	121,641	61.4	8,012,039	3,292,416	1,484	123	564	26.0
1940	9,994	2,672,780	3,249,606	351,008	101,926	60.6	6,957,452	2,983,187	1,177	358	708	31.6
Reading 1941	1,430	417,177	459,169	54,708	12,273	60.8	824,988	374,212	227	22	107	30.1
1940	1,442	397,263	438,954	50,812	11,625	60.0	852,542	409,026	211	13	144	39.1
Pocahontas Region:												
Chesapeake & Ohio 1941	3,043	565,668	588,636	16,969	19,141	60.7	1,246,172	578,814	310	141	64	12.4
1940	3,044	851,264	898,440	40,512	38,579	56.6	3,244,653	1,765,876	380	47	86	16.8
Norfolk & Western 1941	2,169	451,646	465,474	21,615	16,234	67.8	1,034,775	457,219	246	69	32	9.2
1940	2,169	618,014	648,759	37,373	27,068	57.1	2,257,577	1,173,671	271	46	40	11.2
Southern Region:												
Atlantic Coast Line 1941	5,071	795,263	811,049	11,777	17,692	58.4	1,118,148	393,054	301	2	39	11.4
1940	5,075	672,520	683,980	9,503	14,764	60.5	896,562	307,974	270	13	43	13.2
Central of Georgia† 1941	1,831	289,107	292,550	4,460	6,864	73.8	381,752	154,803	93	...	26	21.8
1940	1,831	259,403	261,102	3,950	5,594	69.4	322,620	124,762	98	...	22	18.3
Illinois Central (incl. Y. 1941	6,521	1,368,250	1,374,523	24,697	40,217	63.5	2,561,725	1,059,069	536	4	176	24.6
& M. V.) 1940	6,557	1,251,672	1,257,927	23,780	34,752	59.7	2,285,893	911,966	588	67	186	22.1
Louisville & Nashville 1941	4,856	1,058,635	1,118,471	23,371	23,210	62.2	1,504,872	641,512	303	94	57	12.6
1940	4,862	1,089,442	1,160,742	30,716	26,300	57.3	1,913,232	880,467	362	35	93	19.0
Seaboard Air Line* 1941	4,298	693,531	716,355	4,674	17,345	63.1	1,051,830	385,646	248	1	57	18.6
1940	4,301	606,961	626,627	4,243	14,507	62.6	883,692	320,348	252	3	52	16.9
Southern 1941	6,521	1,437,437	1,461,914	20,234	35,558	69.7	1,960,255	772,574	519	1	127	19.6
1940	6,548	1,344,888	1,366,758	19,982	30,080	65.0	1,803,004	723,985	485	...	157	24.5
Northwestern Region:												
Chicago & North Western† ... 1941	8,316	864,134	894,712	16,271	26,865	62.8	1,664,308	631,328	314	35	242	40.9
1940	8,324	771,319	795,037	16,843	22,831	61.1	1,451,049	513,698	283	89	255	40.7
Chicago Great Western 1941	1,447	255,659	257,031	7,259	7,821	62.6	486,424	173,086	70	...	16	18.6
1940	1,447	241,421	242,511	4,387	7,042	62.1	437,629	154,441	67	...	16	19.3
Chi., Milw., St. P. & Pac.† ... 1941	10,847	1,241,225	1,289,397	44,257	38,494	64.7	2,398,402	969,888	446	48	123	19.9
1940	10,874	1,147,227	1,189,856	44,050	33,465	62.1	2,148,145	867,371	396	101	158	24.1
Chi., St. P., Minn. & Omaha. 1941	1,618	197,365	205,584	8,355	4,753	68.5	282,471	104,194	96	23	14	10.5
1940	1,619	193,476	200,101	7,444	4,423	65.5	268,998	102,294	88	34	16	11.6
Great Northern 1941	7,970	929,567	923,595	28,207	33,249	61.9	2,356,428	1,060,306	338	50	117	23.2
1940	7,973	744,873	738,663	24,397	25,317	64.1	1,690,385	710,626	328	64	145	27.0
Minneap., St. P. & S. St. M.† 1941	4,251	384,287	391,070	4,859	9,881	68.0	589,674	251,838	118	...	9	7.1
1940	4,261	368,550	373,564	4,108	8,681	63.8	523,396	206,802	115	...	23	16.7
Northern Pacific 1941	6,422	693,949	734,028	44,497	26,112	71.2	1,575,012	695,666	337	38	74	16.5
1940	6,423	654,470	691,862	39,367	22,766	67.3	1,407,546	602,045	288	65	93	20.9
Central Western Region:												
Alton 1941	915	206,125	219,444	892	4,743	63.0	309,116	121,605	60	6	11	14.3
1940	914	187,136	194,848	1,077	3,863	60.5	247,476	91,895	53	15	15	18.1
Atch., Top. & S. Fe (incl. 1941	13,431	2,259,169	2,475,989	128,383	66,013	60.8	4,304,786	1,411,816	633	60	157	18.5
G. C. & S. F. & P. & S.F.). 1940	13,414	1,880,050	2,027,114	96,119	53,053	59.8	3,467,695	1,083,440	598	68	183	21.6
Chicago, Burl. & Quincy 1941	8,924	1,105,074	1,136,820	40,311	34,855	68.9	2,031,661	820,126	406	20	118	21.7
1940	8,969	1,022,944	1,047,390	36,186	31,091	64.2	1,887,493	742,097	410	44	97	17.6
Chi., Rock I. & Pac.† 1941	7,911	1,141,322	1,164,015	7,982	29,889	60.6	1,871,396	681,252	325	27	144	29.0
1940	7,881	1,043,423	1,048,056	6,237	25,449	57.2	1,654,947	571,872	315	60	164	30.4
Denver & Rio Gr. Western† .. 1941	2,547	276,915	308,319	34,109	8,235	69.2	511,418	216,478	118	27	34	19.0
1940	2,554	248,783	274,571	27,766	7,401	66.8	470,835	194,853	123	40	24	12.8
Southern Pac.—Pac. Lines... 1941	8,505	1,746,945	1,901,097	239,329	63,028	62.8	4,026,433	1,430,172	659	21	123	15.3
1940	8,553	1,465,048	1,581,109	179,216	51,503	61.1	3,383,808	1,142,684	572	61	147	18.8
Union Pacific 1941	9,892	2,145,259	2,237,620	138,827	67,879	65.8	4,125,538	1,556,335	609	26	210	24.9
1940	9,898	1,712,934	1,777,974	101,489	56,860	65.3	3,444,831	1,252,570	490	58	304	35.7
Southwestern Region:												
Mo.-Kansas-Texas Lines 1941	3,281	401,497	405,883	5,792	10,307	64.8	614,026	224,502	76	...	101	57.1
1940	3,281	353,027	355,573	5,081	8,659	61.9	522,015	178,938	83	...	90	52.0
Missouri Pacific† 1941	7,109	1,155,671	1,184,300	22,618	35,540	65.6	2,217,391	868,042	390	27	87	17.3
1940	7,120	1,012,065	1,031,569	20,198	29,552	62.1	1,866,056	692,550	351	99	70	13.5
Texas & Pacific 1941	1,882	267,368	267,368	1,610	8,949	63.9	552,055	197,920	68	35	85	45.2
1940	1,932	261,182	261,182	1,973	8,057	58.0	532,856	178,292	71	23	94	50.0
St. Louis-San Francisco† 1941	4,735	760,977	773,554	13,251	17,057	61.6	1,091,776	427,756	274	15	34	10.5
1940	4,778	642,642	649,042	8,278	14,007	59.2	904,448	343,482	263	66	26	7.3
St. Louis-San Fran. & Texas. 1941	159	28,813	29,140	46	451	60.1	29,491	9,472	11	3	...	...
1940	159	25,181	25,276	25	381	59.3	24,257	8,325	10	1	3	21.4
St. Louis Southw. Lines† 1941	1,600	300,204	304,562	3,909	9,291	66.5	550,180	210,228	89	12	23	19.5
1940	1,633	258,165	259,083	3,320	7,239	63.2	433,214	154,167	76	20	14	12.7
Texas & New Orleans 1941	4,415	669,350	669,604	8,031	17,025	65.2	1,081,378	420,126	214	5	42	16.1
1940	4,415	590,948	590,982	5,586	14,178	63.6	907,541	337,654	204	13	49	18.4

* Report of receivers.
† Report of trustee or trustees.
‡ Under trusteeship, Erie R. R. only.

Items for the Month of April, 1941, Compared with April, 1940

Region, road, and year	Number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour excluding locomotives and tenders	Gross ton-miles per train-mile, excluding locomotives and tenders	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles including locomotives and tenders	Locomotive miles per locomotive-day
New England Region:													
Boston & Albany 1941	737	5,586	6,323	0.9	22,660	1,325	466	20.2	361	27.6	6,428	149	69.6
1940	947	4,161	5,108	2.2	20,511	1,259	423	18.8	337	27.4	4,840	165	56.7
Boston & Maine 1941	3,940	9,488	13,428	2.5	30,562	2,145	775	20.3	583	42.1	4,213	92	79.4
1940	5,185	7,054	12,239	5.8	28,596	1,969	707	20.7	546	39.4	3,464	98	68.0
N. Y., New Hav. & Hartf.† .. 1941	5,828	14,906	20,734	2.9	29,624	2,018	719	19.6	438	33.7	5,303	105	77.7
1940	7,216	11,703	18,919	4.1	28,970	2,013	711	19.7	419	32.9	4,124	105	65.2
Great Lakes Region:													
Delaware & Hudson 1941	8,127	3,930	12,057	4.8	38,682	2,417	1,045	26.9	650	37.6	9,417	110	42.9
1940	8,023	3,334	11,357	3.7	32,740	2,131	992	29.9	672	36.1	8,974	118	48.9
Del., Lack. & Western 1941	9,589	6,835	16,424	4.1	39,250	2,276	888	22.4	614	39.6	10,652	125	77.2
1940	11,125	5,496	16,621	6.4	36,473	2,084	804	23.0	553	36.7	9,523	133	77.5
Erie (incl. Chi. & Erie)‡.... 1941	15,051	17,338	32,389	2.5	45,195	2,590	968	21.8	711	48.3	10,264	97	70.5
1940	16,487	12,182	28,669	3.9	46,249	2,717	1,011	22.6	701	48.0	9,055	94	58.8
Grand Trunk Western 1941	2,712	7,649	10,361	6.6	36,302	1,853	633	20.8	515	39.4	5,922	87	111.5
1940	4,199	6,373	10,572	6.2	36,310	1,830	632	21.8	512	39.0	5,246	97	95.0
Lehigh Valley 1941	8,904	10,782	19,686	1.7	48,381	2,488	1,044	25.4	599	34.6	9,586	105	85.7
1940	9,580	7,184	16,764	2.3	44,300	2,363	952	25.4	568	35.1	7,910	113	64.3
New York Central 1941	74,874	54,969	129,843	8.8	38,126	2,130	803	23.5	534	37.0	6,939	103	81.4
1940	88,492	54,713	143,205	12.1	38,119	2,228	893	27.1	537	33.9	7,192	102	78.4
N. Y., Chicago & St. Louis... 1941	5,164	8,755	13,919	2.5	43,318	2,222	819	21.8	1,024	71.2	9,243	87	126.8
1940	6,802	7,272	14,074	2.7	40,916	2,150	770	21.9	857	63.1	7,400	94	105.7
Pere Marquette 1941	6,144	7,391	13,535	3.1	31,722	1,764	643	22.2	562	39.7	3,996	99	96.0
1940	8,637	7,678	16,315	2.7	31,495	1,790	662	23.9	500	34.4	3,888	94	87.0
Pittsburgh & Lake Erie 1941	12,953	6,709	19,662	8.5	33,533	2,586	1,346	40.7	178	7.2	13,235	116	43.2
1940	15,527	3,485	19,012	20.8	41,949	3,283	1,825	48.9	221	7.8	17,640	87	36.3
Wabash* 1941	9,501	10,698	20,199	1.7	40,865	1,978	721	21.3	685	47.7	5,989	109	83.7
1940	12,223	8,638	20,861	10.0	39,754	1,885	637	20.4	554	43.5	4,830	117	74.4
Central, Eastern Region:													
Baltimore & Ohio 1941	52,984	29,999	82,983	3.3	29,758	2,049	858	26.7	529	30.7	6,940	141	64.1
1940	58,026	25,132	83,158	11.3	29,563	2,152	944	30.2	532	28.8	6,948	142	56.1
Central of New Jersey† 1941	6,506	11,349	17,855	4.5	26,712	2,125	965	29.2	299	16.5	8,190	149	71.6
1940	9,498	10,607	20,105	22.6	28,747	2,252	1,503	33.3	282	14.3	8,187	137	60.3
Chicago & Eastern Illinois.... 1941	2,874	3,487	6,361	5.1	29,890	1,546	616	23.6	574	36.1	3,931	128	69.9
1940	3,324	2,998	6,322	9.5	28,323	1,511	588	24.1	512	33.3	3,512	133	66.1
Elgin, Joliet & Eastern 1941	7,932	5,584	13,516	4.6	15,767	1,969	921	35.1	223	10.8	8,350	124	74.2
1940	8,482	3,503	11,985	4.2	17,328	1,902	915	36.0	222	10.2	6,920	124	57.4
Long Island 1941	82	3,576	3,658	0.7	5,604	748	268	26.3	63	4.5	665	308	46.4
1940	137	3,571	3,708	1.3	5,693	826	317	29.1	79	5.2	716	317	45.8
Pennsylvania System 1941	166,064	73,744	239,808	11.9	37,071	2,468	1,014	27.1	457	27.5	11,019	126	73.9
1940	198,262	58,633	256,895	14.7	38,871	2,648	1,135	29.3	390	22.0	9,950	111	59.5
Reading 1941	20,544	16,653	37,197	9.9	25,280	1,983	900	30.5	332	17.9	8,723	144	57.0
1940	24,442	11,421	35,863	18.5	27,725	2,154	1,033	35.2	374	17.7	9,455	138	50.3
Pocahontas Region:													
Chesapeake & Ohio 1941	52,546	8,834	61,380	1.0	37,927	2,223	1,033	30.2	333	18.1	6,340	97	43.3
1940	45,070	15,379	60,449	2.7	55,585	3,864	2,103	45.8	972	37.5	19,337	73	67.2
Norfolk & Western 1941	49,126	5,416	54,542	0.9	38,602	2,316	1,023	28.2	319	16.7	7,027	119	51.7
1940	35,960	5,065	41,025	4.7	56,184	3,694	1,920	43.4	964	38.9	18,037	91	70.5
Southern Region:													
Atlantic Coast Line 1941	12,459	10,144	22,603	10.6	24,621	1,409	495	22.2	570	43.9	2,584	115	86.3
1940	14,661	7,384	22,045	16.1	24,530	1,336	459	20.9	456	36.1	2,023	111	76.0
Central of Georgia† 1941	3,847	4,307	8,154	1.2	25,635	1,327	538	22.6	606	36.4	2,818	122	89.4
1940	4,945	2,620	7,565	2.5	24,716	1,250	483	22.3	549	35.4	2,271	121	80.3
Illinois Central (incl. Y. 1941	26,888	19,712	46,600	3.1	31,492	1,905	788	26.3	780	46.7	5,414	132	69.1
& M. V.) 1940	31,999	14,500	46,499	3.3	30,985	1,847	737	26.2	671	42.9	4,636	133	56.6
Louisville & Nashville 1941	40,373	11,907	52,280	3.0	23,804	1,424	607	27.6	451	26.3	4,404	136	88.3
1940	35,391	11,141	46,532	11.6	28,028	1,759	810	33.5	636	33.1	6,036	126	84.7
Seaboard Air Line* 1941	10,663	8,772	19,435	1.8	26,823	1,541	565	22.2	649	46.2	2,991	120	88.4
1940	11,920	6,079	17,999	4.9	25,890	1,475	535	22.1	580	41.9	2,483	123	76.1
Southern 1941	22,841	23,540	46,381	7.1	23,609	1,370	540	21.7	551	36.4	3,949	141	80.7
1940	23,095	18,604	41,699	7.1	23,526	1,349	542	24.1	583	37.3	3,685	141	75.7
Northwestern Region:													
Chicago & North Western†... 1941	29,355	19,261	48,616	7.0	29,996	1,966	746	23.5	421	28.5	2,531	120	56.7
1940	34,366	15,484	49,850	12.5	30,062	1,917	679	22.5	344	25.0	2,057	120	47.5
Chicago Great Western 1941	1,827	3,805	5,632	2.1	34,879	1,906	678	22.1	981	70.9	3,987	119	108.9
1940	2,413	2,870	5,283	1.9	33,695	1,814	640	21.9	988	72.5	3,558	120	101.9
Chi., Milw., St. P. & Pac.†... 1941	36,079	20,029	56,108	1.4	32,617	1,941	785	25.2	570	34.9	2,981	118	78.3
1940	44,551	15,570	60,121	2.7	31,482	1,880	759	25.9	477	29.6	2,659	120	68.1
Chi., St. P., Minn. & Omaha. 1941	1,879	4,998	6,877	5.1	19,919	1,436	530	21.9	466	31.0	2,147	108	56.9
1940	3,672	4,711	8,383	7.8	19,666	1,397	531	23.1	396	26.2	2,106	114	55.0
Great Northern 1941	29,517	10,427	39,944	4.7	40,849	2,543	1,144	31.9	873	44.2	4,435	95	66.8
1940	33,921	9,211	43,132	7.4	35,182	2,279	958	28.1	542	30.1	2,971	108	52.3
Minneap., St. P. & S. St. M.† 1941	10,843	4,351	15,194	3.3	25,689	1,538	657	25.5	549	31.7	1,975	97	106.5
1940	12,161	3,506	15,667	4.7	25,007	1,424	563	23.8	438	28.9	1,618	101	94.2
Northern Pacific 1941	25,490	6,440	31,930	6.1	38,263	2,282	1,008	26.6	721	38.0	3,611	125	63.3
1940	29,543	5,329	34,872	10.9	35,053	2,159	923	26.4	575	32.3	3,124	134	59.9
Central Western Region:													
Alton 1941	1,046	5,172	6,218	5.1	36,577	1,506	592	25.6	599	37.1	4,430	136	100.0
1940	1,623	5,265	6,888	5.2	33,165	1,329	494	23.8	440	30.5	3,351	139	83.7
Atch., Top. & S. Fe (incl. 1941	57,655	16,579	74,234	6.8	38,414	1,911	627	21.4	646	49.7	3,504	117	108.0
G. C. & S. F. & P. & S.F.). 1940	64,613	11,803	76,416	11.3	37,813	1,850	578	20.4	482	39.5	2,692	118	88.4
Chicago, Burl. & Quincy 1941	24,155	16,808	40,963	4.6	32,872	1,846	745	23.5	654	40.3	3,063	113	76.0
1940	29,218	13,886	43,104	6.5	33,013	1,851	728	23.9	565	36.9	2,758	116	69.1
Chi., Rock I. & Pac.† 1941	17,332	14,061	31,393	4.6	31,758	1,642	598	22.8	741	53.7	2,870	114	81.8
1940	20,195	10,776	30,971	5.9	30,703	1,590	549	22.5	612	47.6	2,419	114	68.7
Denver & Rio Gr. Western†.. 1941	10,897	2,883	13,780	2.8	32,724	1,853	784	26.3	524	28.8	2,833	158	66.9
1940	12,064	3,082	15,146	3.5	32,720	1,898	786	26.3	432	24.6	2,543	150	57.6
Southern Pac.—Pac. Lines... 1941	27,619	28,290	55,909	3.3	38,122	2,320	824	22.7	859	60.2	5,605	100	96.1
1940	28,976	25,991	54,967	4.1	39,332	2,323	785	22.2	705	52.0	4,453	97	80.4
Union Pacific 1941	33,515	23,743	57,258	5.5	42,418	1,937	731	22.9	919	60.9	5,244	125	97.7
1940	38,014	17,645	55,659	15.1	45,017	2,023	736	22.0	747	51.9	4,218	120	75.1
Southwestern Region:													
Mo.-Kansas-Texas Lines 1941	4,997	3,606	8,603	11.9	30,926	1,532	560	21.8	870	61.7	2,281	86	82.5
1940	5,677	3,135	8,812	7.1	30,757	1,480	507	20.7	682	53.4	1,818	91	67.5
Missouri Pacific† 1941	15,788	21,062	36,850	2.5	35,830	1,929	755	24.4	781	48.8	4,070	111	85.7
1940	18,212	13,736	31,948	3.2	34,240	1,849	686	23.4	708	48.7	3,242	115	73.2
Texas & Pacific 1941	2,497	4,550	7,047	1.0	41,975	2,065	740	22.1	923	65.4	3,505	84	50.8
1940	3,609	3,358	6,967	2.2	39,576	2,040	683	22.1	824	64.1	3,076	86	50.2
St. Louis-San Francisco† 1941	15,509	7,519	23,028	2.2	29,398	1,444	566	25.1	653	42.3	3,011	120	85.9
1940	18,496	4,555	23,051	2.2	28,424	1,411	536	24.5	502	34.6	2,396	124	65.5
St. Louis-San Fran. & Texas. 1941	....	415	415	4.1	22,932	1,028	330	21.0	741	58.7	1,986	135	65.4
1940	....	358	358	3.1	19,753	964	331	21.9	714	55.2	1,745	131	61.7
St. Louis Southw. Lines† 1941	1,924	3,413	5,337	1.4	38,327	1,835	701	22.6	1,295	86.0	4,980	83	91.3
1940	2,657	2,389	5,046	3.4	34,238	1,683	599	21.3	999	74.2	3,147	87	83.1
Texas & New Orleans 1941	4,907	11,895	16,802	3.2	31,345	1,627	632	24.7	808	50.2	3,172	87	91.7
1940	6,303	10,154	16,457	4.6	29,905	1,549	576	23.8	674	44.5	2,549	89	77.8

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

of first mortgage, six per cent bonds, and to reduce the interest rate to four per cent during the extended period; and (3) pledge $200,000 of its first mortgage bonds as collateral security for its $80,000 note and to pledge up to $50,000 of its first mortgage bonds as collateral security for its $20,000 note.

CENTRAL OF NEW JERSEY.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon the operation of its West 23rd Street ferry from Jersey City, N. J., to New York City, N. Y., three miles. The company also asks authority to abandon the ferry terminal.

CHICAGO & CALUMET RIVER.—*Deficit Status.*—Division 4 of the Interstate Commerce Commission has found that this company did not sustain a decrease in its net railway operating income while under private operation in the Federal control period and is not entitled to the benefits of section 204 of the Transportation Act of 1920, as amended January 7, 1941.

CHICAGO & NORTH WESTERN.—*Equipment Trust Certificates.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to assume liability for $2,325,000 of two per cent equipment trust certificates, maturing in 10 annual installments of $233,000 on July 1 in each of the years from 1942 to 1946, inclusive, and of $232,000 on July 1 in each of the years from 1947 to 1951, inclusive. The issue has been sold at 100.261 to Harris, Hall & Co. and associates, making the average annual cost to the company approximately 1.95 per cent.

CHICAGO & NORTH WESTERN.—*Interest Payment.*—The district court, on June 23, approved an order allowing the trustee of the North Western to distribute to security holders the sum of $9,028,315, already earned and set aside for interest payment, subject to any readjustments that might be necessitated should the final reorganization plan be modified.

COLLINS & GLENNVILLE.—*Abandonment.*—This company would not be permitted to abandon a portion of its line extending from Reidsville, Ga., to Glennville, 16 miles, if Division 4 of the Interstate Commerce Commission adopts a proposed report of its Examiner A. G. Nye. Examiner Nye found that "instead of an operating deficit averaging about $8,620 annually since 1936, as reported by the applicant, a revision of the income account based on the applicant's records and on the evidence herein indicates an average operating profit of about $2,760 yearly."

CRYSTAL RIVER—CRYSTAL RIVER & SAN JUAN.—*Abandonment.*—These two roads have filed with the Interstate Commerce Commission a joint application for authority to abandon their lines (all operated by the C. R. & S. J.) extending from Carbondale, Colo., to Marble, approximately 28 miles.

GREAT NORTHERN.—*Abandonment.*—Examiner Lucian Jordan has recommended in a proposed report to Division 4 of the Interstate Commerce Commission that it find that a line of railroad extending from Republic, Wash., to Knob Hill, 4.5 miles, sought to be abandoned by this company, is an industrial track within the meaning of section 1 (22) of the Interstate Commerce Act, and dismiss the application for want of jurisdiction.

ILLINOIS CENTRAL.—*Equipment Trust Certificates.*—This company has asked the Interstate Commerce Commission for authority to assume liability for $6,920,000 of equipment trust certificates, maturing in 20 semi-annual installments of $346,000, beginning September 1, 1941. The proceeds will be used as part of the purchase price of new equipment costing a total of $7,699,166 and consisting of 1,000 40-ton box cars; 1,000 50-ton hopper cars; 200 40-ton refrigerator cars; 100 70-ton covered hopper cars; and 100 50-ton flat cars.

KANSAS CITY SOUTHERN.—*New Director.*—Charles S. McCain, president of Dillon, Read & Co., a New York investment firm, has been elected a director of this road, succeeding the late J. A. McDonough.

MERIDIAN & BIGBEE RIVER.—*Ratification of Trustee.*—D. M. Graham has asked the Interstate Commerce Commission to ratify his appointment as trustee of this company during reorganization proceedings under section 77 of the Bankruptcy Act.

MISSOURI PACIFIC.—*Abandonment.*—This company has been authorized by the Interstate Commerce Commission to abandon a branch line extending from LeRoy, Kans., to Madison, 29.5 miles. On November 20, 1939, Division 4 authorized the abandonment, but the full commission set aside the certificate and reopened the case.

Chairman Eastman, in a concurring opinion, pointed out that only one train a day operated on the line and that it carried a crew of five men. He suggested that not more than three men were necessary to operate the train and that if a gas-propelled unit were substituted, two would be sufficient. He was not sure that the reduction in expense which would result from operating the train with a smaller crew would justify the continuance of the branch, but he was willing to move to reopen the case so that this possibility could be considered, if any one wanted to take advantage of such an opportunity.

Commissioner Splawn, dissenting, pointed out that the fact that a particular branch line is not operating at a profit is no reason for discontinuing it. "If every portion of the railroad system in this country which does not earn a profit should be abandoned," he declared, "it would be surprising how much railroad mileage would disappear. . . . Such small rivulets of traffic if dried up by abandonment will ultimately shrink total system traffic materially." Commissioner Patterson joined Mr. Splawn in his dissent.

NEW YORK CENTRAL.—*Equipment Trust Certificates.*—This road awarded an issue of $15,000,000 equipment trust certificates to Salomon Brothers & Hutzler, Dick & Merle-Smith and Stroud & Co., on June 19, on a bid of 100.539 for 2¼s, representing an interest cost to the road of about 2.15. The certificates, which mature in equal annual installments, July 15, 1942 to 1951, inclusive, were re-offered publicly at prices to yield 0.40 to 2.60 per cent, according to maturity.

NEW YORK, NEW HAVEN & HARTFORD.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon a line extending from West Medway, Mass., to Bellingham Junction, 4.1 miles.

NEW YORK, NEW HAVEN & HARTFORD.—*Equipment Trust Certificates.*—This road awarded, on June 24, an issue of $2,890,000 of equipment trust certificates to Gregory & Son on a bid of 99.36 for 1¾s, representing an interest cost to the road of 1.87. The certificates, which mature in from 1 to 10 years, were not re-offered publicly.

NORTHERN PACIFIC.—*Abandonment.*—Acting on this company's own request, Division 4 of the Interstate Commerce Commission has dismissed its application in Finance Docket No. 12427 for authority to abandon a portion of a line in Silver Bow County, Mont.

NORTHERN PACIFIC.—*Equipment Trust Certificates.*—This company has awarded an issue of $5,700,000 of equipment trust certificates to L. M. Marks & Co. on a bid of 99.274 for 2s, representing an interest cost basis to the road of 2.14. The certificates mature in ten equal annual installments, July 15, 1942 to 1951, inclusive.

OKLAHOMA & RICH MOUNTAIN.—*Abandonment.*—This road has applied to the Interstate Commerce Commission for authority to abandon its entire line extending from Page, Okla., to Pine Valley, 17 miles. The line was built in 1925 to serve a Pine Valley lumber mill which is discontinuing operations.

PENNSYLVANIA.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon its so-called Penfield branch extending from a connection with its Low Grade branch at Penfield, Pa., to the end of the line, one mile.

PERE MARQUETTE.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon a line extending from Tappan, Mich., to Almont, 30.1 miles.

SACRAMENTO NORTHERN.—*Abandonment of Operation.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon operation under trackage rights over tracks and facilities of the bridge railway of the California Toll Bridge Authority between San Francisco, Calif., and Oakland, 6.8 miles. At the request of the Railway Labor Executives Association, Division 4 has retained jurisdiction in the case until such a time as the United States Supreme Court decides whether or not the commission has the power to attach labor-protection provisions to abandonment certificates. (A case to settle this question is now pending in the Supreme Court.)

ST. LOUIS, KENNETT & SOUTHEASTERN.—*Deficit Status.*—Division 4 of the Inter-

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state Commerce Commission has found that this company earned a net railway operating income in excess of 5¾ per cent per year on the value of its property and is not entitled to reimbursement under the provisions of section 204 of the Transportation Act of 1920, as amended January 7, 1941, for any losses suffered during the period of federal control. Division 4 found that the period of private operation was 20 months, which would entitle the company to earn income at the rate of 9.58 per cent for the period, whereas it earned at the rate of 15.48 per cent. An order was entered dismissing the carrier's claim.

SOUTHERN PACIFIC.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon a portion of its so-called Success branch extending from Success, Calif., to Clavicle, 5.8 miles.

SOUTHERN PACIFIC.—*Abandonment by the Pacific Electric.*—The Pacific Electric has been authorized by Division 4 of the Interstate Commerce Commission to abandon a line extending from Pomona Junction, Calif., to North Pomona, 1.6 miles.

WESTERN PACIFIC.—*Annual Report.*—The 1940 annual report of this company shows net deficit of $913,592 after interest and other charges, a decrease of $1,054,046 as compared with net deficit in 1939. Selected items from the income account follow:

	1940	Increase or Decrease Compared with 1939
RAILWAY OPERATING REVENUES	$18,489,801	+$1,799,812
Maintenance of way	2,675,023	+313,789
Maintenance of equipment	2,643,466	−245,599
Transportation	6,738,441	+419,336
TOTAL OPERATING EXPENSES	13,644,105	+645,341
Operating ratio	73.79	−4.09
NET REVENUE FROM OPERATIONS	4,845,696	+1,154,471
Railway tax accruals	1,038,979	+37,573
Railway operating income	3,806,717	+1,116,898
Net rents	1,160,678	−145,347
NET RAILWAY OPERATING INCOME	2,646,040	+971,550
Other income	294,010	+3,033
TOTAL INCOME	2,940,050	+974,583
Rent for leased roads and equipment	3,600	.....
Interest on funded debt	3,610,294	+782,194
TOTAL FIXED CHARGES	3,795,943	−10,506
NET DEFICIT	$913,592	−$1,054,046

Dividends Declared

Carolina, Clinchfield & Ohio.—$1.25, quarterly, payable July 21 to holders of record July 10.

Richmond, Fredericksburg & Potomac.—A dividend of $3.00 on both Common stock and Dividend Obligations, payable June 28 to holders of record June 20.

Average Prices of Stocks and Bonds

	June 24	Last week	Last year
Average price of 20 representative railway stocks..	28.85	28.87	26.83
Average price of 20 representative railway bonds..	64.95	64.55	54.90

Railway Officers

EXECUTIVE

R. L. Gebhardt, division superintendent on the Lehigh Valley at Jersey City, N. J., has been appointed executive assistant of the New York, Ontario & Western, with headquarters at New York, effective July 1, with duties to be assigned by the trustee.

Harry R. Gernreich, whose appointment as superintendent of the Los Angeles division of the Southern Pacific, with headquarters at Los Angeles, Cal., was reported in the *Railway Age* of June 7, has been elected also vice-president and general manager of the San Diego & Arizona Eastern.

R. E. Dunn, executive vice-president of the Baltimore Steam Packet Company (owned by the Seaboard Air Line), has been elected president, succeeding **L. R. Powell, Jr.,** co-receiver of the railroad. **R. P. Jones,** chief finance and accounting officer, Seaboard Air Line, has been elected vice-president of the steamship company to succeed Mr. Dunn.

FINANCIAL, LEGAL AND ACCOUNTING

Francis J. Melia, a member of the Union Pacific law department at Omaha, Neb., has been promoted to assistant general attorney, with the same headquarters.

Harold S. Wood, secretary and assistant treasurer of the Richmond, Fredericksburg & Potomac, has been elected secretary-treasurer, with headquarters as before at Richmond, Va. **L. T. Oliver,** assistant secretary, has been elected assistant secretary-assistant treasurer. A photograph of Mr. Wood and a biographical sketch of his career were published in the *Railway Age* of July 27, 1940.

Robert Sumner Shapard, whose election as vice-president and general counsel of the Texas & Pacific, with headquarters at Dallas, Tex., was reported in the *Railway Age* of June 14, was born at Mobile, Ala., on February 10, 1874, and graduated from the University of Texas in 1896. He entered railway service on August 15, 1899, with the International-Great Northern at Palestine, Tex., as assistant attorney, later being advanced to assistant general attorney. In 1911, he went with the Texas & Pacific as assistant general attorney and during the period of Federal control of the railroads he served as general attorney of the Texas & Pacific, the Fort Worth Belt, the Weatherford, Mineral Wells & Northwestern and the Gulf, Texas & Western (now part of the Chicago, Rock Island & Pacific). On March 1, 1920, when the railroads were returned to private ownership he continued as general attorney of the Texas & Pacific. In the latter part of 1925, he was appointed assistant general attorney, with headquarters as before at Dallas, and in the latter part of 1933 he was advanced to general solicitor. Mr. Shapard was promoted to general counsel in 1939, which position he held until his recent election as vice-president and general counsel.

M. L. Bluhm, whose promotion to general solicitor of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Chicago, was reported in the *Railway Age* of June 14, was born at Kendallville, Ind.,

M. L. Bluhm

on March 25, 1889, and graduated from the University of Indiana in 1913 and the University of Chicago law school in 1917. In 1917 he enlisted for service in the World War and served in the U. S. Navy as an ensign. Following his discharge in 1919, he engaged in law practice in Chicago until 1922, when he entered the service of the Milwaukee as assistant general solicitor. Mr. Bluhm was promoted to general attorney in 1931, which position he held until his recent promotion, effective June 16

OPERATING

C. O. Overbey, telegraph engineer in the office of the superintendent of telegraph of the Atchison, Topeka & Santa Fe, has been promoted to assistant superintendent of telegraph, with headquarters at Los Angeles, Calif., succeeding **R. M. Iliff,** deceased.

Gideon J. Willingham, trainmaster on the Illinois Central at Champaign, Ill., has been promoted, effective July 1, to superintendent of the Illinois division, with the same headquarters, succeeding **Joseph T. Stanford,** who will be appointed terminal manager at Chicago, succeeding to the duties of **Arthur M. Umshler,** superintendent of the Chicago Terminal division, who will retire because of ill health on that date. **Edgar J. Brosseau,** assistant trainmaster at Kankakee, Ill., will be promoted to trainmaster at Champaign, to relieve Mr. Willingham. The position of terminal superintendent at Chicago will be discontinued.

John F. Sharkey, trainmaster on the Illinois Central at Water Valley, Miss., has been promoted, effective July 1, to superintendent of the Mississippi division, with the same headquarters, succeeding **Thomas K. Williams,** who will be transferred to the Kentucky division, with headquarters at Paducah, Ky., replacing **James W. Kern,** who will retire because of ill

Continued on next left-hand page

health on that date. **Herman J. Rouck,** yardmaster at Ft. Knox, Ky., will be promoted to trainmaster at Water Valley, to relieve Mr. Sharkey. **Wayne A. Johnston,** assistant to the vice-president and general manager, who has been in charge of the Kentucky division during the illness of Mr. Kern, will return to his post at Chicago.

Don K. Price has been promoted to assistant superintendent of transportation of the Louisville & Nashville, with headquarters at Louisville, Ky., as reported in the *Railway Age* of June 21, page 1136.

Mr. Price was born at Rensselaer, Ind., on January 31, 1880, and entered railway service on December 1, 1896, as a file clerk in the office of the superintendent of the L. & N. at Middlesboro, Ky. In August, 1901, he was transferred to the general freight office at Montgomery, Ala., as a stenographer, and in the following year he was appointed secretary to the superintendent at Pensacola, Fla. In May, 1904, he was sent to Middlesboro on the Cumberland Valley division, where he was subsequently appointed assistant master of trains. On June 1, 1913, he was advanced to master of trains, with the same headquarters, and on June 1, 1918, he was further promoted to assistant superintendent of the Cumberland

Don K. Price

Valley division. Mr. Price was advanced to superintendent of the Cincinnati division, with headquarters at Latonia, Ky., in August, 1936, and a year later he was transferred to the Louisville division, with headquarters at Louisville, which position he held until his recent promotion.

Mr. Love was born at Knoxville, Tenn., and attended the University of Cincinnati. He entered railway service in November, 1909, as a laborer in the mechanical department of the L. & N. at Knoxville, later being advanced to machinist apprentice. After completing his apprenticeship at Knoxville at Etowah, Tenn., he was appointed machinist at the latter point and was later transferred to Covington, Ky. In the spring of 1919 Mr. Love was promoted to assistant roundhouse foreman and several months later he was transferred to DeCoursey, Ky. On February 1, 1925, he was promoted to assistant master mechanic with jurisdiction over the shops at both DeCoursey and Covington and on June 15, 1931, he was advanced to master mechanic, with headquarters at Nashville, the position he held until his recent promotion.

Clarence C. Fertig, whose promotion to superintendent of the Oklahoma division of the Chicago, Rock Island & Pacific, with

Clarence C. Fertig

headquarters at El Reno, Okla., was reported in the *Railway Age* of June 14, was born at Bement, Ill., on December 10, 1888, and took the adult extension course of the University of Oklahoma from 1920 to 1924. He entered railway service in December, 1905, as a clerk on the Rock Island at Shawnee, Okla., later serving as a switchman and night yardmaster at that point. In October, 1912, he was promoted to general yardmaster at Haileyville, Okla., and in March, 1913, he was transferred to Shawnee. Mr. Fertig was transferred to El Reno in September 1924, and in February, 1927, he was promoted to assistant trainmaster at Seminole, Okla. In December, 1930, he was transferred to Oklahoma City, Okla., and in January, 1937, he was promoted to trainmaster, with headquarters at El Reno. Mr. Fertig was further advanced to assistant superintendent on the Missouri-Kansas division, with headquarters at Kansas City, Mo., in August, 1939, and in March, 1941, he was appointed acting superintendent of the Oklahoma division, with headquarters at El Reno, which position he held until his recent promotion, effective June 1.

TRAFFIC

Charles D. Hardin, superintendent of traffic of the Indiana Railroad, has been appointed traffic manager of the Southern Indiana Railway, Inc., with headquarters as before at Indianapolis, Ind.

William M. Long, northern traffic manager of the Illinois Terminal, with headquarters at Chicago, has been promoted to eastern traffic manager, with headquarters at New York, succeeding **H. A. Tuohy,** and **L. C. Bundy,** general freight agent at St. Louis, Mo., has been advanced to northern traffic manager at Chicago, relieving Mr. Long. **F. L. Dennis,** general agent at Decatur, Ill., has been promoted to general freight agent at St. Louis, replacing Mr. Bundy, and **K. L. Stivers,** general agent at Minneapolis, Minn., has been transferred to Decatur, succeeding Mr. Dennis. **K. E. Snow,** general agent at Danville, Ill., has been transferred to Minneapolis, relieving Mr. Stivers, and **J. J. Flynn** has been appointed general agent at Danville, replacing Mr. Snow.

Robert G. Henderson general freight agent of the Boston & Albany, has been promoted to freight traffic manager, with headquarters as before at Boston, Mass., to succeed **Richard Van Ummersen,** who will retire on July 1, after more than 49 years of service. **E. P. Gardiner,** assistant to freight traffic manager, has been promoted to assistant freight traffic manager at Boston. **S. Lancaster,** assistant general freight agent, has been promoted to general freight agent at Boston. **F. E. McGrath,** assistant general freight agent on the New York Central at Albany, N. Y., has been appointed assistant general freight agent and industrial agent on the Boston & Albany at Boston.

Mr. Van Ummersen was born on December 14, 1875, at Boston and attended the public schools of Cambridge, Mass. He entered railroad service on July 26, 1891, with the Boston & Albany, serving in various positions in the ticket auditor's office until February, 1896, when he became claim tariff and rate clerk in the general freight office. From June, 1900, to June, 1906, Mr. Van Ummersen was chief clerk, becoming division freight agent at Worcester, Mass., on the latter date. He was assistant general freight agent at Boston from November, 1907, to June, 1911, when he became general freight agent. He became freight traffic manager in March, 1920, the position he held until his retirement.

Henry Valentine Borjes, whose promotion to general freight agent of the Atlantic Coast Line at Wilmington, N. C., was reported in the *Railway Age* of June 14, was born on September 22, 1899, at Norfolk, Va. Mr. Borjes attended the public schools of Norfolk, and entered railroad service in 1916 with the New York, Philadelphia & Norfolk (now Pennsylvania) and later served on the Seaboard Air Line and the Norfolk Southern. He then served

Henry Valentine Borjes

as secretary to the traffic manager of the Carolina Shippers Association, Inc., Wilson, N. C., and as associate rate specialist for the North Carolina Corporation Commission at Raleigh, N. C. Mr. Borjes en-

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tered the service of the Atlantic Coast Line on July 15, 1929, and was appointed assistant general freight agent on August 1, 1935, the position he held until his recent promotion.

Carl W. Sunderbrink, assistant to freight traffic manager and industrial agent of the Pittsburgh & Lake Erie, has been appointed general freight agent, with headquarters as before at Pittsburgh, Pa., succeeding **Leroy Blue,** who has been transferred to Chicago. **H. A. B. Brown,** division freight agent at Pittsburgh, succeeds Mr. Sunderbrink as assistant to freight traffic manager and industrial agent. **Paul J. Schweibing** has been appointed general agent to succeed **Estey N. Smith,** who has been appointed division freight agent, succeeding Mr. Brown.

ENGINEERING AND SIGNALING

Charles H. Mottier, assistant to the vice-president and chief engineer of the Illinois Central, has been promoted, effective July 1, to chief engineer, with headquarters as before at Chicago, and **Fred L. Thompson,** vice-president and chief engineer, will continue as vice-president in charge of the engineering department. Mr.

Charles H. Mottier

Mottier was born at Gibson City, Ill., on April 21, 1888, and graduated in civil engineering from the University of Illinois in 1910. He entered railway service in 1910 as an instrumentman and inspector on track elevation work for the Chicago Burlington & Quincy in Chicago, and in February, 1911, went with the Illinois Central on construction work in the bridge department, serving successively as masonry inspector, construction foreman, draftsman, designer and assistant engineer. In 1918 he was transferred to the office of the chief engineer at Chicago as an assistant engineer, later being promoted to office engineer. In 1920 Mr. Mottier was appointed office engineer of the Chicago Terminal Improvements of the Illinois Central, and in 1924 he was appointed engineer of design, with headquarters as before at Chicago. In 1935 he was promoted to assistant to the vice-president and chief engineer. Mr. Mottier has been an active member of the American Railway Engineering Association for many years, having served as a member of the Committee on Yards and Terminals since 1922 and at present is serving his second year as chairman of that committee.

Rossel L. Cook, whose promotion to assistant chief engineer of the Central of Georgia at Savannah, Ga., was reported in

Rossel L. Cook

the *Railway Age* of June 14, was born on January 8, 1887, at Mattoon, Ill. He attended the public schools of Bellefontaine, Ohio, and was graduated from Ohio State University in 1911 with a degree in civil engineering. Mr. Cook entered railroad service on December 19, 1906, serving for 18 months in the engineering department of the Pennsylvania, then serving for six months as engineer for the Red Jacket Coal Company at Matewan, W. Va., prior to completion of his college education. Mr. Cook entered the service of the Central of Georgia as draftsman at Savannah in June, 1911, and served successively as instrumentman, assistant engineer, principal assistant engineer and office engineer, holding the latter position at the time of his recent promotion to assistant chief engineer.

John E. Rogan, whose promotion to assistant engineer maintenance of way on the Illinois Central, with headquarters at Chicago, was reported in the *Railway Age* of May 31, was born at New Orleans, La., on November 3, 1886, and graduated in

John E. Rogan

civil engineering from Tulane University in 1907. He entered railway service in 1907 as a section foreman on the Illinois Central, and in September, 1913, was promoted to track supervisor of the New Orleans terminal. Mr. Rogan was advanced to division engineer of the New Orleans terminal in February, 1919. In September, 1931, his jurisdiction was extended to include the Louisiana division and the Gulf & Ship Island (part of the Illinois Central system), and his headquarters were transferred to McComb, Miss. On October 1, 1939, he was appointed trainmaster of the New Orleans terminal, with headquarters at New Orleans, which position he held until his recent promotion, effective June 1.

O. M. Barlow, assistant division engineer on the Southern Pacific at Oakland Pier, Cal., has been promoted to division engineer of the Western division, with the same headquarters, to succeed **F. A. Bordwell,** who will retire on July 1.

MECHANICAL

I. W. Martin, general foreman locomotive shops of the New York Central, west of Buffalo, with headquarters at Collinwood, Ohio, has been appointed superintendent of shop at West Albany, N. Y., locomotive shop, effective July 1.

OBITUARY

Roy P. Rockefeller, assistant treasurer of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Chicago, died suddenly of a heart attack on June 22.

Robert Caldwell Pearson, assistant treasurer of the Seaboard Air Line, with headquarters at Portsmouth, Va., died on June 23 in a Portsmouth hospital, at the age of 67.

John Erhardt Muhlfeld, consulting engineer and leader in the development and design of motive power and rolling stock, died on June 19 at Harkness Pavilion, New York, of a heart attack, after an illness of two weeks, at the age of 68. Mr. Muhlfeld was born at Peru, Ind., on September 18, 1872, and entered railroad service during the summer of 1890. After serving in various capacities on the Wabash and its predecessors, and with Canadian roads, he entered the service of the Baltimore & Ohio in 1902, serving successively as assistant to general superintendent motive power, superintendent motive power and general superintendent motive power. From 1910 to 1912 Mr. Muhlfeld was vice-president and general manager in charge of reconstruction, Kansas City Southern, at Kansas City, Mo. During 1912 and 1913 he investigated steam railway practices in European countries, and since the latter year has been a consulting engineer, with offices at New York. Mr. Muhlfeld was the author of many papers on various phases of railway operation and management published in railway, scientific and technical journals. His principal activities included railway improvement, rehabilitation, valuation and development of railway motive power, rolling stock, shop machinery, tool and power plant equipment, etc. During the first World War he developed the use of powdered coal as substitute for fuel oil in marine service.

The Week at a Glance

NEW CONDITIONS, OLD TECHNIQUE: Railroad service (including the job of every railroad employee) nowadays has to *meet the test of the market place.* That is to say, the railroads no longer tell their customers what their transportation is going to cost them; they put a price on railroad service and, if that price is higher than that of an alternative form of transportation—the railroads do not get the business and railroad jobs are thereby reduced. The leading editorial herein points out that every payment made for work not done *weakens the railroads in their competitive struggle for traffic,* and hence their ability to provide jobs. The editorial suggests that railroad employees, and even union executives, are poorly informed in the elementary facts which now control railroad employment; and hence that they are insisting on policies which are disadvantageous to labor.

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TWO MONTHS' EARNINGS: Net railway operating income for the first two 1941 months ran at the annual rate of 4.27 per cent, which compares with 2.79 per cent in 1940 and 3.79 per cent in 1930. Gratifying as this report is, two months is a small part of a year—and even if earnings ran at this level for a whole year, investors in gaging the railroads' attractiveness as investments have to look back upon ten years when the rate of return has averaged only 2 per cent.

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TRIMMED FOR SPEED: How 11-year-old locomotives have been altered to fit them to present-day higher speeds is related in an article herein, dealing with C. G. W. experience. The locomotives are 2-10-4's, and, while their performance was good at lower speeds, they rode roughly and were hard on track when the pace was quickened. Correction included cross-balanced disc wheels and lightweight rods.

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GETTING MILK BACK: How the milk tanks, which are designed to shift quickly and inexpensively from truck to rail and vice versa, are turning the trick in getting milk traffic back on the New York Central is related in a brief article elsewhere in these pages.

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DEFENSE PLANT LOCATION: If you are interested in knowing what chances your locality has of getting defense plants assigned to it, turn to the news pages herein and read the rules that the Defense Commission has laid down for locating such plants in future. Areas at present non-industrial seem to be favored, if they can show an adequate supply of competent labor for whom new houses will not be needed.

●

SILLCOX ON THE DITCH: Such members of the engineering fraternity as are inclined to look upon any federal construction project as *ipso facto* of professional advantage to them (and hence not requiring rigorous economic scrutiny) will probably not enjoy L. K. Sillcox's article on the St. Lawrence project in the current issue of "Mechanical Engineering." This article, which is briefly reviewed in the news pages herein, takes this project apart with the competence and objectivity to be expected of the author—and leaves it standing stark naked in its unadorned deformity. It is not a particularly pretty sight, and certainly adds nothing to the reputation of the project's advocates as connoisseurs of the true, the beautiful and the good.

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SO MUCH FOR SO MANY: A penetrating insight into the political troubles which, more so than Hitler, threaten the welfare of the American people, is evidenced in an address (abstracted herein) by C. E. Johnston, chairman of the Western Association of Railway Executives. There is no "ideology" in the demonstrable fact that *no other economic system has done so much for so many* as the traditional American system. The speaker makes it clear that some business interests, who claim to be such staunch defenders of our honored institutions, are, in reality, their principal traducers; and he proves his indictment by citations from the transportation industry. How about clipping this piece out and sending it to some of your waterway and superhighway contacts? They are the boys—quite as much as Hitler and the Communists—who are cutting the props out from under U. S. A. prosperity, its freedom, and its future.

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"SABOTAGING DEFENSE": This is the characterization which the respected Montreal Gazette puts upon the St. Lawrence seaway project. "The materials that will go into this undertaking," the Gazette continues, "are needed for war purposes, so is the money and so are the men." As a matter of cold fact, there seems to be little enthusiasm in the Dominion for this socialistic venture. The Canadians are trailing along with reluctance, merely because the New Deal has turned the heat on them; and because New Deal support is needed for Canada's war effort. In the meantime, legislation for the project has not yet reached Congress. The New Deal Machiavellians are still doing their work behind the scenes.

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GOVT. A TRUCKER IN G. B.: Truck operators in this country have been repeatedly warned that, if conditions are made so tough for the railroads that government operation ensues, the trucks will soon also find themselves a socialized enterprise. Corroboration of this opinion comes from England in the announcement that the British government is embarking in the business of truck operation—following its centralization of railway operation under government control soon after the war started. Government economic enterprises do not relish competition, nor even tolerate it for long; a situation to which the brains, confessedly so superior, of this country's automotive and kindred industries might profitably give greater heed than they have so far.

WHO GETS THE RR $?: 1940 expenditures of the Class I railroads for materials and supplies, as compiled by the Bureau of Railway Economics, are tabulated by states in the news pages herein. Pennsylvania heads the list with 172 million dollars and Illinois comes next with almost 103 millions. Then follow Ohio, Indiana, New York, California and West Virginia, in the order named.

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EQUIPMENT BOOM: In the first quarter of 1941, orders for locomotives have totaled 324, freight cars over 27,000, and passenger cars almost 300. This is the largest first quarter's locomotive business since *prior to* 1929 and the largest first quarter's freight car volume of any year *since* 1929. Details are set forth in the news pages herein. Unfortunately, the bloom on the cheeks of the equipment market must be recognized as a febrile flush—although it is no greater than healthy business conditions would provide, given once more sane political policies toward private enterprise.

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LCL AND THE PRR: The vigorous campaign being conducted by the Pennsylvania to increase its l. c. l. tonnage, and the economy with which such business is handled, is surveyed in a brief article in these pages. The P. R. R. has almost doubled its average load per car in l. c. l. service and it cites figures to establish the profitability of this traffic. Information is also given as to the steps being taken to solicit this tonnage with energy and effectiveness; and the rate reforms which the P. R. R. is supporting.

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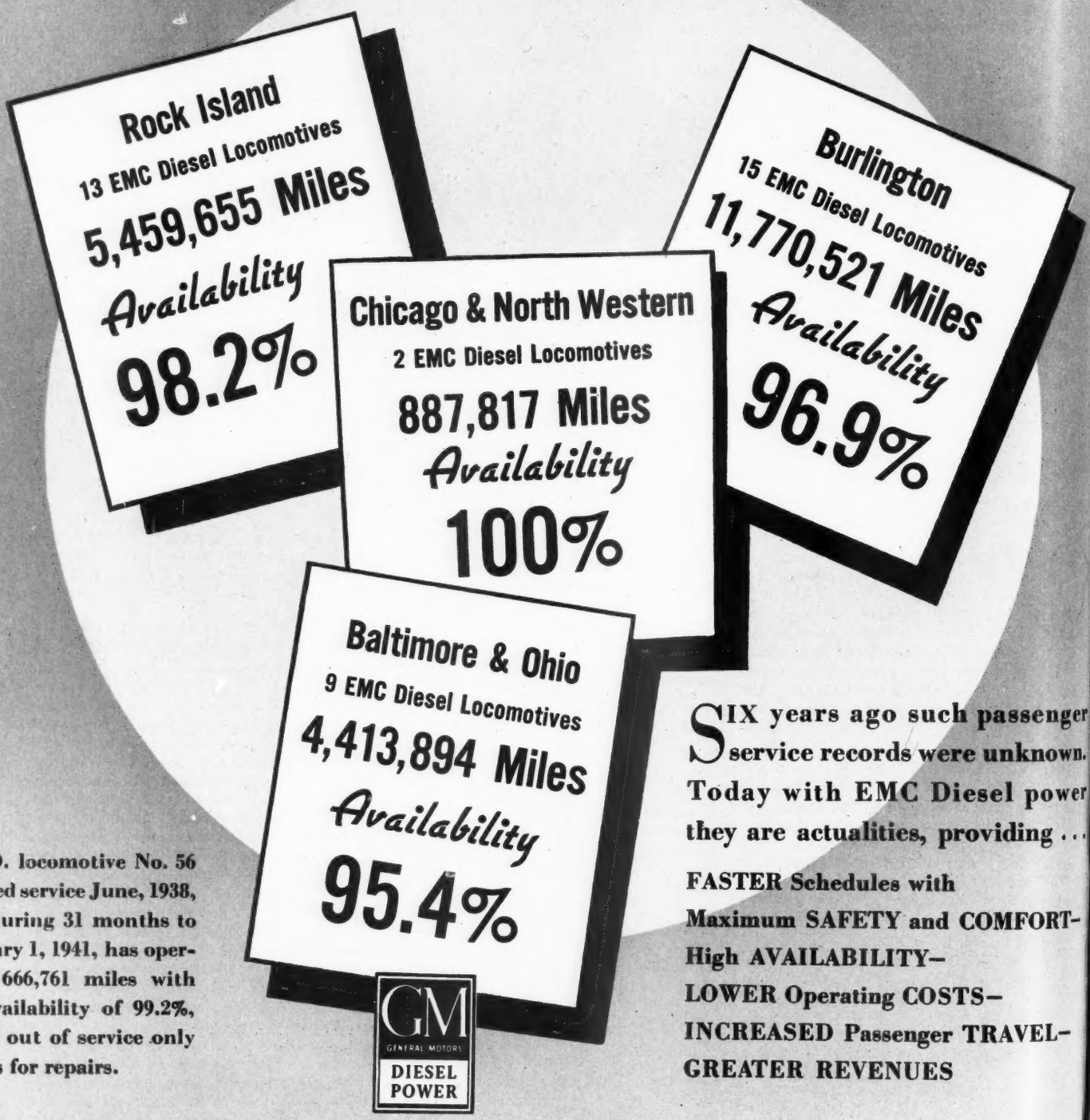
ANOTHER REFEREE CASE: A case is reported herein in which a Railroad Adjustment Board referee got so enthusiastic in handing out railroad money that he passed out better than $2,000 which the employee-beneficiaries had never even asked the railroad to pay them. Nothing, it is said, gives as much true pleasure as philanthropy. He who can practice this virtue with other people's money, with but hasty scrutiny into the justice of the claimant's cause, and draw $50 or $75 a day for his trouble—would thus appear to be quadruply blessed.

●

LIGHT ON PIPELINES: More and more, the question of pipelines and who gets the benefit from them is coming out into the open. A couple of such lines in the Southeast came up for discussion before a House committee this week—the same in behalf of which President Roosevelt spoke out a few weeks ago, seemingly at the instigation of some subordinate who did not give him all the facts. Questions which need to be settled are: The advisability of requiring certificates of convenience and necessity for pipeline construction; a "commodities clause" to divorce these transportation agencies from the oil companies; restricting them to a "fair return;" requiring them to accept small quantities, and otherwise to conduct their operations as true common carriers.

only DIESELS *could*

TURN IN THESE RECORD PERFORMANCES



B. & O. locomotive No. 56 entered service June, 1938, and during 31 months to January 1, 1941, has operated 666,761 miles with an availability of 99.2%, being out of service only 7 days for repairs.

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The Week at a Glance

INFLATION PRO AND CON: The government is attempting to control prices by intimidating industrial managements—but it is not controlling *costs,* such as wages and taxes for wasteful governmental expenditures. And its monetary policies are, potentially, extremely inflationary. So, what is being done is to generate all the *causes* there are for general inflation, while attempting to prevent the *symptoms* of inflation from showing. As the leading editorial herein points out, not even the absolutist Nazi government of Germany has taken on so difficult an assignment.

●

POST-WAR PUMP PRIMING: Along with colossal current expenditures (with business profits largely removed) the New Deal is planning huge post-war public works outlays—largely aimed at putting the railroads out of business; and killing off railroad employment. But other private enterprises are also destined for the socialist chopping block, many of them being as slow to catch on to what awaits them as were the bemused railroad employees who voted for Mr. Roosevelt in last fall's election, considering him to be a "friend of the working man."

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WAR ON THE MIDDLE CLASS: Far more resolutely and purposefully than it is preparing for the national defense, the New Deal is carrying on an internal squeeze-play against those of our citizens who have more than average incomes and who own the bulk of the country's property (which class, incidentally, includes a large percentage of railroad employees, as well as officers and supervisors). As the leading editorial herein points out, the country ought to unite for national defense, but it is just plain foolishness to expect the middle class to put up most of the brains and the money needed to carry on a domestic policy aimed at its own annihilation. We should take a look at France's experience and discontinue this reckless internal revolution before it undermines our military effectiveness. And every member of the middle class ought to be awakened to what the politicians are planning for him in their "wave of the future."

●

SAFETY SEC. QUIZ: A new technique of putting over the messages of experts at conventions was inaugurated at last week's New Orleans Safety Section meeting. Instead of the authorities talking at the audience, they were put into a panel and were grilled with questions from the membership—like they do it on the popular radio quiz programs. Our transportation editor, who was there, reveals some enthusiasm for the innovation in his report of the proceedings, published herein.

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CARTEL RATE-MAKING: Commissioner Splawn has dissented from a majority decision of Div. 2, denying the railroads authority to cut rates on petroleum products from South Atlantic ports to interior S. C. and N. C. points. Dr. Splawn emphasized the need of the railroads for tonnage if they are to afford consumers the economies of railroad service. All of which raises the question whether rate regulation (in the light of the Supreme Court decision in the Northwest petroleum case) is taking on the characteristics of a cartel—the function of which is to promote the provision of excessive transportation facilities; their *minimum* utilization; and consequent excessive costs to customers. In short, a merger of competition and monopoly, retaining the bad features of each.

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COY ON COY BOARD: Whenever the question comes up of confirming the Transport Study Board, headed by Wayne Coy, some of the essential senators seem always to be otherwise—and presumably more pleasantly—engaged, for reasons suggested in the news pages herein.

●

GRAIN CARS IN DEMAND: Car Service Chairman Kendall is "calling all cars" of the granger roads. It looks like there is going to be a big wheat movement during the coming harvest; and conditions aren't going to be helped any by the big carry-over from last year now occupying a large percentage of available storage space. Compared with this prospect—the Western lines had 13 per cent less of their own cars on line at the middle of March than they did a year ago; while the Eastern and Allegheny roads held 49 per cent more Western cars in March this year than they did last. So a quota plan has been put into operation to start the cars homeward.

●

TRANSPORT IN DEFENSE: The National Defense Advisory Commission has been denuded of all of its functions, except oversight of transportation (under the direction of Ralph Budd) and protecting the interests of agriculture. Former responsibilities of the Defense Commission have been divided up between the O. P. M. (the Knudsen organization) and the so-called Office for Emergency Management, over which the truculent New Dealer, Leon Henderson, presides as chief commissar. The President has said that "studies" are under way to determine to which organization the transportation and agricultural agencies should be assigned. Any bets?

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SOLDIERS AT 1¼c PER MI.: Soldiers, sailors and marines—traveling in uniform, with papers to show that they are on furlough and paying their own way—will be carried by the railroads at 1¼ cents per mile, effective about May 1.

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ARMY RAILROADING: Railroad men are too old on the average nowadays to supply enough men to do the railroading for the Army—hence the necessity for operating a sample railroad, which will begin operations in June, where inexperienced men can serve their apprenticeship. But that isn't the only reason why the Army needs this actual practice (as a report in the news pages herein reveals)—modern mobile war and greater use of airplanes has made military railroading tougher than it was in France back in 1918; and the Army has got to simulate these new conditions and develop a railroading technique for licking them.

1-STOP COALING STA.: A locomotive stops for coal and, without another move, it also takes on water and sand and gets its cinders dumped; and the plant services any locomotive regardless of size. Such is an installation by the Lehigh, on its main line at Towanda, Pa., described and illustrated elsewhere herein.

●

AUTOMATIC WELDING: The rapid increase in welding in freight and passenger car construction—and the ingenious devices by which this process is being made more economical—is discussed in a paper herein by A. C. F.'s electrical engineer.

●

FLEXIBLE WAGES: In contrast to the large inflexible wage increases being hi-jacked out of the American people by labor unions, which are capitalizing on their country's peril, comes the request of Canadian railway employees for an adjustment in their compensation, as reported in the news pages herein. The Canadian employees are not seeking to use the present occasion to improve permanently their economic status, but only to protect themselves against rising living costs. While there is some disagreement over details, there is none on principles. The wage adjustment sought would be flexible, falling or rising automatically; not being a one-way-street, storing up disputes over wages when the war ends. It is the old Anglo-Saxon tradition of fair play which, somehow, seems to have taken firmer root north of the border than south of it.

●

NOTE TO RR EMPLOYEES: As his contribution this week to the superhighway propaganda "softening-up" campaign, President Roosevelt announced the appointment of a 7-man committee to help Chief Spender John Carmody concoct a system of "inter-regional highways"—just something with which further to crucify the taxpayers, after 8 years of New Deal peace-time profligacy and God only knows what burdens for defense. And a fine prospect for railroads and railroad jobs. It won't be a 2-weeks' vacation with pay then, but a permanent vacation without pay.

●

STRATEGY OF ERROR: Anybody who has watched the tricks of professional opinion-fixers can see evidence that their slickest tactics are in full operation to bums-rush this country into a gigantic "super-highway" program. Since these projects cannot be sold on their merits to anybody in his right mind, the technique is to have a new superhighway plan bob up every week or ten days in any quarter where it can get publicity. No discussion—not even favorable. Just spring the idea; and drop it. Then repeat it again; and again; and again. The first thing you know, people have got a subconscious acceptance of the scheme, without ever thinking about it—and opponents have to fight a rear-guard, defensive battle against it. It is a despicable and suicidal business for free enterprise people to muddy their hands with—corrupting the public understanding of economic principles, in which lies the only hope for the continuance of economic freedom. But there you are.

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Okonite's Okoloy coating on conductors eliminates corrosion

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INSULATED WIRES AND CABLES SINCE 1878

The Week at a Glance

HAVING EYES, THEY SEE NOT: The most significant of all contrasts in this country is to be found in the comparative attitude of people whose study of economic questions goes no further than their current week's wages, and that of those who have read some history and economics and done a little looking around. The former are enjoying their new "prosperity" and clamoring for more. The latter are growing daily more apprehensive of the now-imminent dangers which threaten to undermine America's living standards for many years to come. This situation raises important questions of railroad policy, as is set forth in the leading editorial herein. The time has now come to act—and to act quickly, if consequences of the gravest kind are to be avoided.

●

TRANSPORT INFIRMITY: Not to beat about the bush, what America is threatened with is general deterioration of its productive efficiency, and consequent impoverishment—to say nothing of military threats to her safety. The same kind of uneconomic and impolitic behavior which promises soon to wreck our standard of living is also the surest way of weakening our military strength, and hence of inviting armed attack and possible defeat. Railroad people do not have to look afield for the kind of nonsense which is undermining the nation—economically and militarily. Proposed inflexible wage increases at a time like this, and half-hearted opposition to such economically-cancerous ventures as the St. Lawrence and superhighways—these constitute sufficient morbidity to occupy all the white corpuscles available in the transportation industry.

●

COURT OF LAST RESORT: There is only one person who can rescue America from its deadly peril, and that is the well-meaning citizen, Mr. John Q. Public. But Mr. Public cannot act unless he knows the facts, and too many of the few people who do know them are beating their breasts in private; leaving the cynical or befuddled politician as Mr. Public's only source of information. Getting down to cases, the leading editorial herein suggests that a manual be prepared for distribution among railroad employees, setting forth without bias the basic facts of the economic and political forces now working to determine the future of railway employment.

●

COACH RENOVATION: The Delaware & Hudson is continuing its program of coach modernization—a further job in this direction being described and illustrated herein. In addition to air-conditioning, the renovated cars were reseated, their lighting was improved, and a completely new decorating job was done, inside and out.

●

"PERFECT SHIPPING": The drive is on in earnest to eliminate, to the largest degree possible, all damage to freight in transit on the railroads during April—"perfect shipping month." This year an added incentive is given to strive for perfection, in the strategic defense materials which are moving by rail; and damage to which might seriously retard the nation's military program. The nature of the job before the carriers, and what it is hoped may be accomplished, is set forth in an article herein.

●

BUM BRAKES ON TRUCKS: In a test of truck and bus brakes by the Bureau of Motor Carriers, only a little more than half of the trucks were found to have satisfactory brakes, and only 42 per cent of the buses. It was found that braking performance of trucks and tractor-trailer combinations deteriorated as weight increased—just one more of the many good reasons for stringent legal limitations on the magnitude of these vehicles.

●

UNIONS UNDER SOCIALISM: The great rapid transit system of New York is a socialized enterprise—forced into municipal operation by the politicians' whipping up the people to demand something for a nickel which costs more like a dime to produce. As with all socialistic operations (like the T. V. A., "super-highways" and inland waterways) the people pay a large part of the cost in hidden taxes; and thus think they are getting a bargain from public ownership which a soul-less, profit-seeking corporation would deny them. And how are the unions faring under the socialized regime? They are being told where they head in—and by none other than Mayor La Guardia, who for years has been a professional "liberal" and pal of labor leaders. At that, His Honor is dead right; the city government can't allow itself to be dictated to by labor bosses. But the episode gives a preview of the noose some of our labor leaders are sticking their heads into—by following policies which invite the socialization of the railroads and other private industries.

●

INFLATION?: Your reporter was privileged last week to hear off-the-record opinions of several capable students of business trends on the probability of price inflation—and all but one of them expected it would come, induced by the government's reckless monetary and spending policy, as well as its standing by while irresponsible labor unions bludgeon higher wages (for which there is no excuse in living costs) out of employers. Do people who work for a living want their savings, their insurance and their prospective pensions to lose half of their purchasing power, as they did in the last war? And how can the government expect to sell defense bonds to the people, while it gives them reason to suspect that the bonds will lose half or more of their value in a year or so? Harry Scherman's article in the April 12 *Saturday Evening Post* will elucidate this subject further for those who want more light upon it. The preservation of our national safety is going to cost every class of people a lot of money—and the more any one group is encouraged to profiteer, the greater that cost will be; including that to the profiteers themselves.

BY COACH TO ST. LOUIS: A further expansion of the railroad's high-speed, de luxe coach services has been announced—this time between New York and St. Louis, the Pennsylvania being its sponsor. The new train, to be known as the "Jeffersonian," will have a 20¼-hour schedule, substantially equivalent to that of the fastest now available. In addition to comfortable coaches, the train will also make a feature of dining car meals at a substantial reduction from standard prices.

●

TIES BY BARGE: Large claims by an Alabama Congressman as to traffic increases on the T. V. A. waterways reveal, on closer examination, the significant fact that more than three-fourths of this tonnage is sand and stone. But the next largest item on the list is *railroad ties*—which is something to think about.

●

MATERIAL HANDLING: To what degree has handling of material (and freight) been mechanized by railroads in their shops, storehouses and freighthouses? Comprehensive details in answer to this question are given, and tabulated, in an article elsewhere in these pages. The ownership by the carriers of a vast quantity of material-handling equipment is revealed—and a considerable difference in intensification of mechanization among the carriers is disclosed.

●

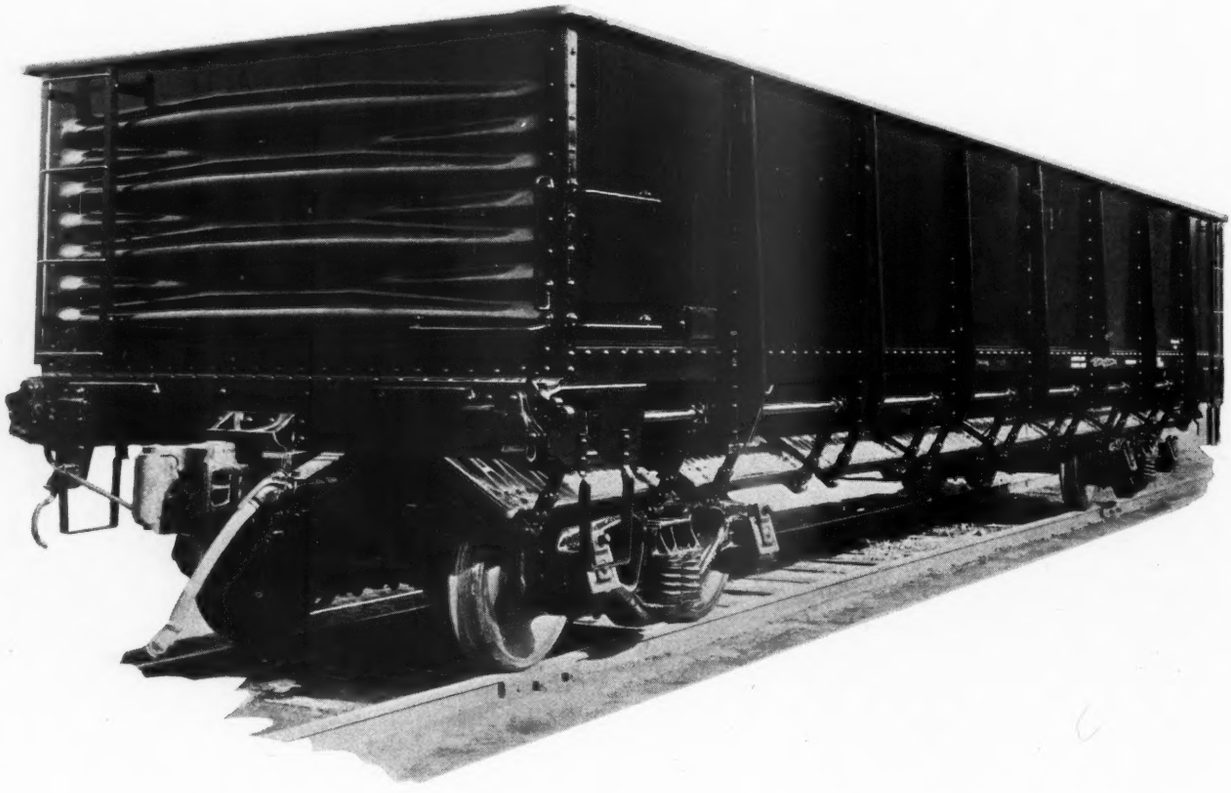
TRANSPORT BOARD: As we go to press there has still been no action on confirmation of the new Transport Board. Rumors published in some sections of the press to the effect that so many protests had been received regarding the personnel of the Board that the names were to be withdrawn, appear to have little foundation. These reports said that the railroads have been protesting the light weight of the Board—but there appears to be no truth whatever in such an imputation. There quite likely are many railroad men who might wish to file a complaint at having the very existence of the railroads ruled upon by a tribunal of such limited experience, but it is seldom that one finds a man so hardy that he will question the competence of a magistrate before whom, tomorrow, he will probably have to appear to plead his cause.

●

TRAFFIC OUTLOOK: Carloadings at the end of March being up about one-fourth over 1940 does not mean that carloadings next fall are also going to be in that ratio above last year. Such was the advice of Transport Commissioner Ralph Budd offered on April 8 in the weekly bulletin of the defense organization. There was no defense business to speak of in the first half of 1940 and loadings were not heavy; that is why present comparisons seem large. The ratios will not be so big next Fall, in his opinion, when we take to comparing with the heavy traffic of the latter part of 1940. No serious difficulties in moving traffic are so far discernible, in his view.

Dreadnaught
STEEL ENDS

FOR RIGID END GONDOLAS



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The Week at a Glance

LORD STAMP'S LEGACY: The great Englishman whom the Nazis killed in his home last week made a large contribution to the railroad industry in his country by bringing to it an attitude of mind which took no practice for granted "because we have always done it that way." A keen and sympathetic observer once said of the railways that—because of the relative infrequency of "new blood" coming in anywhere except at the bottom—there is a tendency for organizations to become "ingrown", like the Army and the clergy. This observer further remarked that the clergy counteract this tendency by frequent shifts in jobs, while the Army also employs that expedient, plus the "War College"—so that going to school never ends. The methods which Lord Stamp employed to put railway management on an up-to-the-minute basis are briefly summarized in the news pages herein.

●

WHITE HOUSE RATE-MAKING: In their spare time the Roosevelt family seem to have qualified themselves to their own satisfaction as judges of the complex question of inter-territorial freight rates. Anyhow, a year or so ago the distaff side of the house was making public pronouncements on the subject, and now the head of the family has declared his conviction that the present rate set-up deals unjustly with southern coal producers. Mme. Perkins, Secretary of Labor, was quoted in Congress as having offered to equalize the rates on coal. The I. C. C. denies knowledge of a general investigation of southern coal rate differentials, which Mr. Roosevelt told reporters he believed was going on.

●

MERGERS URGED: Donald Conn of the Transportation Association in a Chicago speech this week advocated amalgamation of railroads and other transportation agencies into a limited number of systems as the best possible protection against the dangers which the industry now faces from the growing paternalism of government. He also paid his respects to the St. Lawrence Seaway and challenged Adolph Berle to prove his public assertions that a power shortage exists; and how, if so, such shortage can be met by a project which will not be completed for seven years.

●

THE NOT-FUNNY BERLE: Adolph Berle should not be confused with Milton Berle. The latter is a professional comedian, while the former is an Assistant Secretary of State who sacrifices some of his valuable time to make radio talks on varied subjects appertaining to international relations, national defense, and the American tradition of economic freedom. On the air last Sunday evening, this latter Berle explained that Canadians are eager for the St. Lawrence seaway and that no moral pressure has been exerted upon them by the New Deal to go along with this project, as a price of continued U. S. support for the British Empire's defense program. He said that this waterway, which is scheduled for completion in 1948, is needed so that naval vessels can be constructed in the Great Lakes (where one well-placed bomb on the canal would bottle them all up). He evidenced his regard for legitimate private enterprise by imputing "selfish motives" to the railroads, while drawing favorable attention to his own immolation on the altar of public service.

●

COAL RATE INDEX: The I. C. C.'s Bureau of Statistics has issued some index numbers on coal rates which, it is emphasized, have "not been considered or adopted" by the Commission. Anyhow, the index concludes that representative coal rates in 1940 were 2.2 per cent higher than they were eleven years ago. Most of the territorial index numbers for 1940 were also above 100 (1929 being taken as a base)—but the West was an exception, its 1940 index being down to 91.5.

●

PLANLESS TRANSPORT: Since so large a part of the nation's transportation facilities are government-owned, a responsibility rests on government to plan its transportation activities rationally and correlate its plant with that in private ownership. Such was the substance of an observation by Chairman Eastman of the I. C. C. in addressing civil engineers at Baltimore this week—in which he reiterated his recommendation that a permanent governmental transportation-planning agency be established. (By the way, remember that Transportation Board we heard so much about *before* the 1940 Transportation Act was passed?)

●

COMING CHANGES: Mr. Eastman went on to say that a period of rising business is the time to introduce labor-saving devices—when they will not result in loss of employment. He also predicted that the time was coming when highway trailers and semi-trailers would be as interchangeable as box cars (so truck drivers wouldn't have to accompany freight from origin to destination). He thinks that the expense of large railroad terminals ought to be shared by the community, and he would like to see a little dignified beauty introduced at smaller stations.

●

UNIONS AND THE DITCH: The vigorous and intelligent efforts being made by some leaders of organized labor to awaken public understanding of the issues involved in the St. Lawrence Seaway project are exactly what is called for to protect the legitimate interests of their membership. This conclusion is substantiated in the leading editorial herein by charts which disclose that railway employees have a far greater stake in the railways' future than any other interest, because employees derive more revenue from the railroad industry than any other group connected with it. At the same time, it is again pointed out that the logic and the eloquence of railway union leaders will likely prove less effective in convincing politicians of the unwisdom of this measure than the assurance that employees' votes henceforth will not be cast for transportation socializers.

HOW MAKE TRACK FAST?: Few railroad organizations have had more experience than the Burlington (with its 3800 track-miles traversed by Zephyr trains) with the problem of improving track conditions to meet the requirements of very high train speeds. In this issue a paper by the Q's Engineer Maintenance of Way, H. R. Clarke, reviews the whole job—both from the standpoint of its exigencies and the steps which have been taken to meet them.

●

ANOTHER REFEREE CASE: Well, friends, we are publishing another "believe-it-or-not" piece this week from one of the Adjustment Board referees. A couple of "no-bill" operators took clerical jobs during a lay-off and later on were not permitted to exercise their seniority. Whether they should have been accorded that privilege or not is not the question at issue, but the refusal of the referee to hear these employees in defense of their jobs. The learned professor sitting in the case seems to hold the view that only by being a member of a union can an employee get a chance to put his case to the "court."

●

PROTEST REFEREE: While on the subject of this kangaroo court, it is encouraging to note that the railroads are making a vigorous protest against one of the referees who has got pretty arbitrary about giving away other people's money on slender pretexts. Read all about it in the news pages herein and, if cynically inclined, perhaps there may even be some amusement for you in the arguments of the labor lawyer as to why this referee deserves to be continued on the job.

●

NOT WAREHOUSES: The transportation division of the Office for Emergency Management has politely called the attention of shippers to the fact that "a large supply of excellent warehouse storage space is available" and there is no occasion for using railroad equipment otherwise than for transportation.

●

KICKED UPSTAIRS?: The chairman of the still-unconfirmed Transportation Board has been named to head the new OEM, which looks almost like a commissar's job to your reporter. Still 225 miles away from Washington, we cannot pretend to be too sure from day to day just which outfit is currently in the driver's seat.

●

RRS AND THE COAL STRIKE: If the railways *should* have difficulty in handling some traffic at any time during this year, the blame will rest on the persons responsible for the continuance of the coal strike. Figures on what this strike means in temporarily reduced traffic are given in an editorial herein. And when the strike is finally concluded, the governmental incompetents who are largely responsible for its continuance will be expecting the railroads to haul two or three months' coal supply in two or three weeks.

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Inspect a Schaefer Brake Gear Lever. Notice how superfluous weight has been eliminated in the web where excess metal is unessential. Notice, however, that bearing areas at pin holes have been increased—to resist wear. Measure the holes. You'll find them perfectly aligned and accurately spaced. Try a pin. Notice the close fit resulting from close-tolerance reaming of holes.

Those are the features which mean lighter weight (30% per car set) plus high strength, long service life, safety and low cost per mile. Schaefer Equipment Company, Koppers Building, Pittsburgh, Pa.

The Week at a Glance

THE ANTI-RR BLITZ: On the theory that it is not very bright for Hatfields to be knocking each other around when McCoys are closing in on them from all points of the compass—the leading editorial herein draws attention to the gun-barrels aimed out of the New Deal bushes at every railroader, from call-boy to president. Here they are: (1) truck traffic continuing to grow at the expense of the railroads; (2) the New Deal's drive for the St. Lawrence Socialized Seaway; (3) the New Deal's "superhighway" program; (4) the post-war surplus of shipping which then will go into coastwise and intercoastal service; (5) the New Deal's preparations for a vast subsidized post-war expansion of commercial aviation; (6) President Roosevelt's sabotaging of the transport study board—which was to have brought justice and wisdom into the federal transportation policy.

●

THUMBS UP!: There is no use of anybody doing any hand-wringing at the prospects for the railroads. A little fact-facing by all railroaders—employees in the ranks as well as managers—would put the carriers in a position to stand up against the worst things that can come our way. The leading editorial likens the beleaguered position of the railroads to that of the country itself. The nation has a productive capacity which can defend it against all comers—provided we have the fortitude to put that productive capacity to work, instead of wasting it away in strikes and fraudulent "defense" schemes, such as the St. Lawrence Socialized Seaway. Similarly, the railroads can throw back the assaults being prepared against them, if they (employees and managers alike) will have the courage and the realism to fall back on the *natural economy* of railroad service; and tie the can on wasteful practices which stifle that economy. The safety of the railroads—like the safety of the U. S. A. —hinges on the intelligence and the moral toughness of its manhood. Without these qualities the railroads are in for a sleigh ride. And, without them, so will the country be in a hell of a fix.

●

DIXIE SUPERTRAIN: The South, around about May 15, will get one more splendid streamliner—when the Southern starts its daily Washington-Memphis service with the "Tennessean." A stainless steel coach train primarily (done up in brilliant colors) the schedule also calls for Pullman service over a part of the route (which is the familiar "Memphis Special" one, via the N. & W. between Lynchburg and Bristol). Steam power (streamlined) will be used east of Bristol and Diesels beyond.

●

THE DEAN STEPS DOWN: Daniel Willard, who in the minds of many Americans personifies the reliability and responsibility of the railroad industry—as well he might considering his 62 distinguished years in the business—brought his more active professional career to a close this week in his 81st year, when he relinquished the presidency for the chairmanship of his company. He has been succeeded by a former B. & O. man, R. B. White, who returns now to railroading from the presidency of Western Union.

●

TRAFFIC ESTIMATES UP: Ralph Budd no longer adheres to his previous estimate that 1941 traffic will exceed that of 1940 by only 9½ per cent. He now believes the increase will be larger than that. This was revealed at the meeting of the A. A. R. directors last Friday, which Mr. Budd attended. However, the government's head man on transportation does not believe that the traffic rise will be sufficient to embarrass the railroads in any way. The Car Service Division is making another survey of future car requirements and—later on—will break this down road by road, informing each carrier what, in the division's opinion, its "quota" should be. The country's car-manufacturing facilities (except for about 4 or 5 thousand cars) will be fully occupied until October 1 by the orders now on hand or in sight.

●

INFORMING EMPLOYEES: Across the top of the editorial page of the April 29 issue of "Labor" appears a "boxed" article entitled "Railroad Profits Increase Faster Than Traffic and Revenue." There is nothing false in that report except the statement that railroad investment "is a vastly inflated figure"—and yet, to the employee having no other sources of information, it might well convey a sense of security which the facts do not justify. Net railway operating income—which is not "profit," but that is what "Labor" calls it—was about 202 million dollars in the first quarter of 1941, as compared with 116 millions in 1940. That is, in percentages, a considerable increase; but it is still only on the basis of 4.15 per cent a year on the investment. Moreover, investors do not invest their money on a momentary spurt of earnings, but what they think they are likely to earn over a period of years. Even if the railroads should earn 4.15 per cent *for the entire year 1941*, their average percentage return for the 10 years ending 1941 would be only 2.2 per cent. This is not enough to attract new capital into a chance-taking business—and any informant of employees who withholds such significant information is not doing an adequate job.

●

I. C. C. TO CHICAGO?: Rumors persist in the capital—based, apparently, on nothing more substantial than wishful thinking—that the Interstate Commerce Commission is going to be moved from congested Washington to Central Chicago. They have got them living in tents and working in barns in the domain where politics holds sway, while there is still plenty of space to be had in zones where private enterprise once flourished. From where your reporter sits, this rumored move makes too much sense to be given any credence.

DE LUXE COLORED FOLKS: If you run a train in "Jim Crow" territory with de luxe cars in it for white folks, then you have got to haul around empty cars of the same character for the occasional colored politician who might want to sit in lonesome splendor amongst the neon lights, the beige upholstery and the streamlined ash-trays. Such, in substance, is the decree of the Supreme Court in the Mitchell case—which goes on to explain that the "practical difficulties" of the order is no skin off its nose; the worry is for the railroads and the regulatory authorities.

●

"NOT NEUTRAL" REFEREE: Paul Richards—the Adjustment Board referee whom the railroads regard as (and whom they pretty conclusively demonstrated to be) "not a neutral person"—has nevertheless been continued by the National Mediation Board on the job of deciding cases for the kangaroo court. The way to lose your job as a referee is not by being unneutral in behalf of the dominant labor organizations, but by getting them down on you. Look what happened to Dr. Dexter Keezer, whom a vengeful union leader pursued into his private life, successfully opposing his professional advancement therein.

●

COUNTERBALANCING: The A. A. R. directors have approved a Mechanical Division project to spend $83,000 for testing the counterbalancing of locomotive wheels. The location of the tests has not been decided upon—but what the researchers have in mind is about 20 miles of "reasonably straight" track, including 5 miles of tangent.

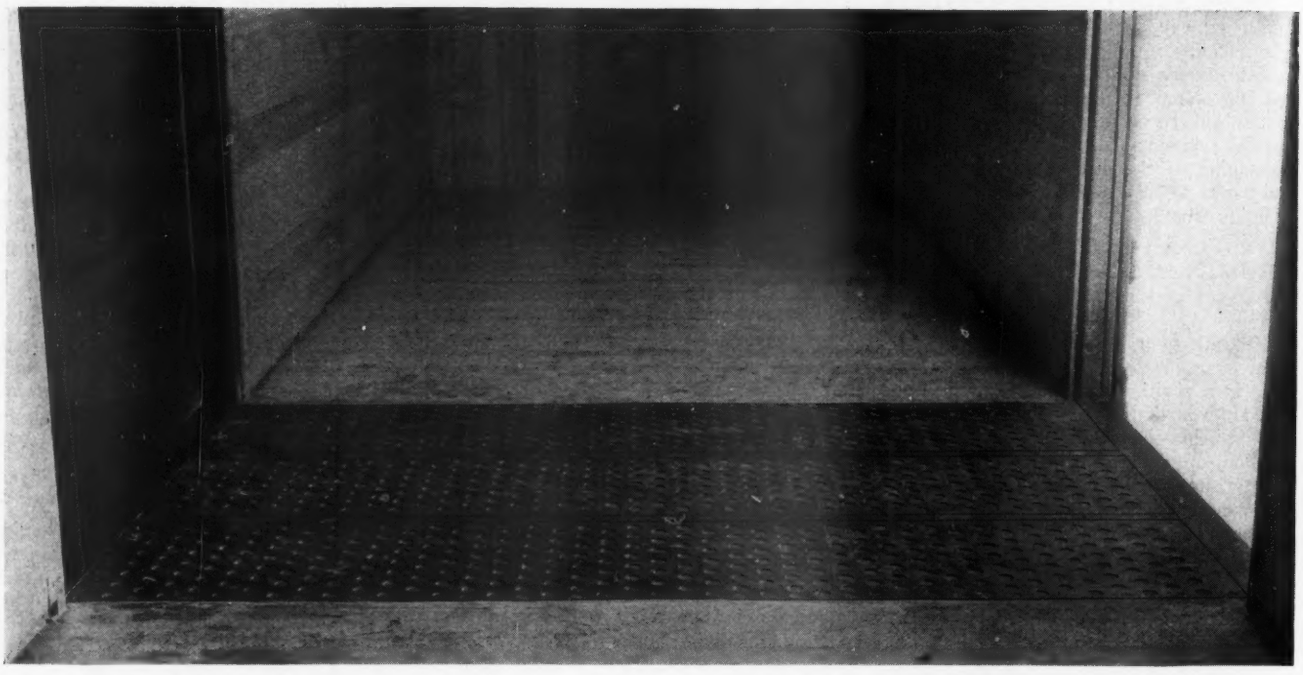
●

1941 BUYING: In the first two months of the current year the railroads bought 216 million dollars worth of materials, equipment and fuel—being almost 32 per cent bigger buyers than they were in the same two months of 1940. Details, by classes of purchases and with comparisons of previous years, will be found in an article elsewhere in these pages.

●

SEEING THINGS AT NIGHT: Anybody despondent over railroad prospects will find a good tonic for himself in the editorials of "Transport Topics"—which tell what a formidable lot of Machiavellis the railroad crowd is. The figures of the truck association show that truck traffic is gaining right along at the expense of the railroads, and yet the only tune the association's mouth-organ plays is the "Miserere." To hear these frightened fellows tell it, the railroaders are smarter and more ruthless than a whole butcher-shop full of Hitlers. The cunning railroad "quislings" and "fifth columnists" are just about to blitz the truck business off the map. It would be reassuring if some of these iron-horse goblins, who have got the teeth of our esteemed contemporary into such a gratifying chatter, would materialize in the flesh.

UNION METAL FLOOR PROTECTOR



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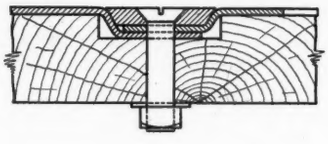
PERFORATED TO PROVIDE ADEQUATE MEANS FOR SECURING LADING.



CONNECTION BETWEEN FLOOR PROTECTING SHEETS

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WORKS: HAMMOND, INDIANA NEW KENSINGTON, PA. WARREN, OHIO

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The Week at a Glance

A TRAFFIC JAM COMING?: The increase in traffic occasioned by the defense effort is turning out to be much greater than was heretofore anticipated. The significant figures are presented and analyzed in the leading editorial herein. For instance, it had been calculated that 1941 traffic would exceed that of 1940 by about 9½ per cent. Actually, in the first quarter of the year the increase was 15 per cent. The coal strike complicates the comparison for April—but, leaving coal out of the calculation, other traffic in April ran 28 per cent ahead of 1940. The task of the railroads in handling promptly all the traffic offered is, plainly, going to be somewhat more of a job than was foreseen a few months ago. For one thing, a perfect performance cannot be expected of the railroads if the traffic is going to come along in "bunches"—due to strikes. It is up to shippers and the government to make the flow as even as possible.

●

A STITCH IN TIME: The acceleration in the increase of traffic has, the editorial discussion goes on to say, about reached a temporary "plateau"—because a number of leading industries have reached capacity production. There is good reason for believing that the carriers can handle 1941 traffic without serious difficulty *provided* the priorities authorities allow them to have materials necessary to complete the rolling stock now being manufactured; and provided that shippers and government will take steps to assure the maximum effective use of available equipment. Further light on the prospective traffic and equipment situation is also given in an address by Ralph Budd, reported herein.

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270,000 CARS: For 1942 the A. A. R. estimates that the railroads will need 120,000 more freight cars—in addition to those now on order. For 1943, an additional 150,000 cars will be needed. This makes no allowance for retirements. Whatever number of cars is retired should be matched by new cars, in addition to this 270,000. It is unfortunate that the traffic gain in sight should have an origin so unhealthy and so temporary. And, even at that, the increase now foreseen—great as it is—falls far short of restoring the level of pre-depression days; bringing traffic only to about the 1930 level. What the level may be after the military crisis passes depends upon the extent to which socialist politicians are permitted further to wreck private enterprise in the intervening period. By St. Lawrence and other ditches, for instance, and by "superhighways" and plans for heavy subsidies to post-war commercial aviation.

●

PORK vs. PATRIOTISM: The politicians of the House rivers and harbors committee — who doubtless expect the American people to submit with patriotic resignation to the heaviest taxes in all history for the country's defense—also want to bleed the public for almost a half-billion more for waterway projects. What railroad man can feel patriotic enthusiasm in having his income tax quadrupled to provide for defense *plus* waterways—when defense alone, without these ditches, could be financed by much lower tax increases? Especially since the only purpose of these waterways is to kill off post-war railroad jobs. At a time when national safety demands a spirit of unity and of sacrifice by the people, these free-wheeling pork-barrel spenders are doing their perverse damndest to kill that spirit.

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AGAINST NEGRO FIREMEN: Like the Californian who took the occasion of a funeral to praise the climate of his state, the railway unions are overlooking no forum in which they might gain some advantage. The B. of L. F. & E. has asked the I. C. C. to turn down all plans for reorganizing the F. E. C. unless that road rescinds its policy of hiring negroes as firemen. Heretofore, reorganization has been a means for re-ordering the finances of a property—and it has been difficult enough to achieve with even that limited objective. If it is also to be loaded down with a multitude of extraneous conditions to placate special interest groups, what chances will there be that reorganizations can *ever* be effected?

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C. OF C.-L. C. D.: Adhering to its "least common denominator" tradition in dealing with fundamental but controversial questions in transportation, the U. S. Chamber of Commerce at last week's meeting adopted resolutions which were calculated to give some recognition to the various transportation interests, and at the same time to avoid controversy. The railroads will, perhaps, be gratified to learn that the Chamber has come out fearlessly and resolutely against public ownership and in favor of voluntary consolidations. The freight forwarders are favored with a resolution that their services be continued substantially as at present. The merchant marine is catered to with a declaration that only such ships should be requisitioned from it as are imperatively needed for military purposes; while the Chamber proves its friendship for the oil industry by recording its opposition to divorcing from that industry its pipe lines and other "captive" transportation facilities. The painful and unpopular thinking needed to cut the waste and chaos out of transportation, plainly, is a job which the Chamber is quite willing to forego.

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WHEAT CAR WORRY: The Car Service Divisions "quota" plan for getting western cars home for the wheat movement has produced "disappointing" results. Moreover the plan now afoot to move 15,000 carloads of carry-over wheat from Western storage to the Gulf and Atlantic seaboards further complicates the car supply problem. L. M. Betts, manager of the Closed Car Section has circularized the roads urging Western lines to use their own cars to a minimum for eastward and southward loadings; while the Eastern lines are asked to use western cars for loadings into that territory. Southern roads are requested not to load western cars for destinations in the North and East.

OCEAN INTERCHANGE: At Newport News the C. & O. has improved its facilities for handling heavy cargo (such as manganese and chromium ore and scrap) between cars and vessels and vice versa—by the installation of two new high-speed portal cranes, which span all five tracks on the pier where they operate. The set-up is described and illustrated elsewhere in these pages.

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STEEL REQUIREMENTS: To build the equipment and renew the track that needs doing in 1941 the railroads and the equipment manufacturers will need about 5,000,000 tons of steel—of which more than half has already been ordered. Details of the carriers' requirements have been given to Priorities Director Stettinius of the OPM and are set forth in a short article elsewhere in these pages.

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SO. SUPERTRAINS: Equipment details on the Southern's two new de luxe coach trains—"Southerner" and "Tennessean"—are given in an illustrated article herein.

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SHOULD GOVT. BUY CARS?: Since the railroads are having to buy a lot of cars to take care of the defense business—which they, unfortunately, are not likely to need once the military emergency passes—the government and not the railroads ought to pay for these cars. Such is the opinion of Chairman Eastman, given in a speech reported in the news pages, several turns to the right of here. He also thinks that the government might give the carriers a little clearer picture than they have now as to how much business is going to come their way. After all, the transportation industry cannot be expected to be prepared to meet all contingencies, unless it is given some inkling of them in advance. Mr. Eastman sees no present indication that government operation is in the offing, but he believes it would come quickly if "defaults or deficiencies" should develop.

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ROBERTSON ON THE DITCH: It must have been eight or nine years ago that your reporter first heard D. B. Robertson present his analysis of the evil effects of subsidized waterways on the economy in general and on railway employees in particular. That Mr. Robertson has in the intervening period kept closely up to date on this vital question is revealed in his piece on the St. Lawrence seaway in the May issue of the B. of L. F. & E. Magazine. Every railroad man ought to read that article—and then ask himself how, at the next election, he is going to regard alleged "friends of labor" who support a scheme which Mr. Robertson accurately characterizes as "a crime against the standards attained by the North American transportation systems and their great loyal body of employees." What these New Deal transportation socializers are in effect saying to railroad men is: "Smile while we tax you to the limit allegedly for national defense: because we are going to spend a lot of the money we are taxing away from you to abolish your post war jobs."

The Week at a Glance

WAGE BOOST SOUGHT: As this paper went to press, representatives of the railway labor organizations were meeting in Chicago to talk over plans for demands for pay increases, and possibly for some more "make-work" rules and pay for work not done. Our customers are respectfully referred to the leading editorials in our issues of April 5 and 12, particularly the latter—in which it was said that "one thing this industry needs is a simply-written and illustrated pamphlet setting forth, without propaganda, the basic facts which determine the volume of railroad employment." If the railroads are now saddled with high wages and expensive working conditions which cannot be rapidly sloughed off when the present "emergency" ends — then the beating that railroad jobs will then take is a tough thing to look forward to. Whose responsibility is it to warn employees as to the probable effect on them of rigid wage increases based on "prosperity" as illusory and fleeting as that we now have?

●

TOLLS TELL THE TALE: The government "experts" who are trying to sell the St. Lawrence Seaway to the American people are doing so by hurling a lot of technical "information" at them, in which the plain citizen is not equipped to detect the falsehoods. The leading editorial herein suggests that mastering a lot of technical details is not necessary to an understanding of the Seaway proposal. Its merits and demerits can be judged with complete adequacy by any man equipped with ordinary horse sense—in which the average citizen is at least as expert as any New Deal boy-wonder. The editorial presents such an analysis and contends that the absence of tolls is what gives the whole project away. If the ditch actually would provide more economical transportation than the railroads, then shippers could pay tolls and still be money ahead. The omission of tolls suggests that, not economy, but socialization of transportation is the Seaway's true purpose.

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RULE 23 OUT: At last, Division 3 of the I. C. C. has got around to approving the railroads' proposal to cancel Rule 23 of the classification, and thereby permit the carriers to act as agents of shippers or consignees in the performance of split deliveries. Commissioners Mahaffie and Alldredge were the majority which decided the case. Commissioner Johnson dissented, insisting that there was no evidence to support the conclusion of his colleagues.

●

UNIONS OKAY CHI. BD.: J. G. Luhrsen, speaking for the Railway Labor Executives Association, has refused to join with the railroads in considering amendments to the Railway Labor Act—designed to correct the abuses which have arisen from the star chamber procedure of the referees under the present set-up. Mr. Luhrsen fears that the suggested amendments would convert the board into a "sort of court" and would magnify litigation. It is common knowledge, on the contrary, that it is the present set-up which encourages litigation. That is, by holding out the strong probability that a man with an unjust claim will win an award (always, be it remembered, at the expense of jobs of honest men willing to do a day's work for their pay), the existing arrangement encourages all kinds of thinly-supported claims. It is difficult to understand how upright men can continue to tolerate, let alone defend, conditions which they must recognize are a festering sore.

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SUBTLE VOGTLE: The energetic traffic manager of the DeBardeleben Coal people at Birmingham made an interesting and clever speech at the Jax meeting of the Associated Traffic Clubs, reported herein. While seeming to defend a basis of rates which would divide traffic among the competing agencies of transportation according to their relative economy, Mr. Vogtle does not appear to differentiate between *costs* and *expenses.* The costs of inland waterway transportation are not the same thing as the operator's expenses. Also, he seems to omit from the "inherent advantages" of railroad service the readiness of these carriers to render service to all traffic to all destinations at all seasons of the year. Consideration of these two points goes far to justify the railroad rates in competition with inland waterway lines, to which Mr. Vogtle objects.

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PEACE — IT'S WONDERFUL: The industrial peace, for which the railway industry receives so much praise in the popular press, is no miracle—but a purchase, which is costing more, possibly, than it is worth. Such is the conclusion of a noted student of transportation—Professor Sidney Miller of the University of Iowa —in an address summarized herein (in the report of the meeting of the Associated Traffic Clubs). This peace, obviously, is costing the railway investor plenty. It is likewise dipping into the pockets of railroad customers. And this expensive appeasement is even hitting the labor organizations which are exacting the toll—by destroying the jobs of employees without enough "whiskers" to hold on to a shrinking payroll. Dr. Miller quotes Mr. Eastman as saying that there are two kinds of people—the long-headed and the others. For the ultimate well-being of railway labor, he regrets that there are not more of the former type among labor leaders.

●

SAFETY FOR THE RECORD: Commissioner Patterson, in a speech reported elsewhere herein, asserts that some roads are so anxious to make favorable safety statistics that they have recorded no loss of time for an employee with both hands in bandages. He went on to say that employee observance of safety rules is a managerial responsibility and that rules are usually observed about as carefully as managers desire them to be.

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INTERLOCKED COAL DOCK: A large coaling station is described and illustrated herein, which has its various handling operations interlocked—so they can be controlled remotely without the chance of one operation fouling another.

U. P. WINS AGAIN: For the thirteenth time in 18 years the Union Pacific has again won the top safety award in "Group A," bestowed by the National Safety Council.

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1808 CROSSING DEATHS: In 1939 deaths at grade crossings totaled 1398. In 1940 they rose to 1808—increase of 29 per cent.

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WHO OWNS AIRLINES?: Most people, even railroad people, are inclined to think of their competitors as private businesses similar to their own. But the real competitor is the government—not private business. For instance, one single municipal airport built with taxpayers' money has cost more than all the transport planes used throughout the country by commercial air lines. The airport is the one in New York, which has set tax-ridden New Yorkers back 48 million dollars, as compared with 40 million dollars for the value of the 355 planes used in commercial transport service (thanks to an alert and valued friend at 17th and H Streets, Washington, for the information). Take the government out of the transportation picture—or else have it charge for its plant the way private business is forced to do—and the railroads would have little to complain of, or to fear from, competition.

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IT'S NEW; SO IT'S ILLEGAL: When the railroads try to make any useful innovation in their service—designed to meet their customers' needs—regulatory traditionalists can usually be depended upon to find some technical objection thereto. Take the case of the farm stock pick-up service, for instance — which an examiner has recommended be forbidden. This service had been instituted and was going strong, when a divided Commission ordered its cessation; but granted a rehearing, which has resulted in this inauspicious examiner's report. The routine regulatory mind is persuaded that such an operation should come under the Motor Carrier Act —which, incidentally, does not regulate trucks handling farm products. Has the Commission no responsibility of a positive character for assuring to the nation a convenient and economical transportation service—or are its duties solely punitive and restrictive; like the tough school-marm who spends so much time fanning her pupils bottoms that she never has time to put anything in their heads?

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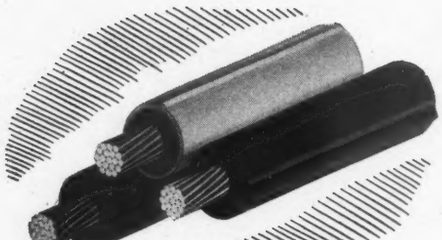
CAR PROGRAM O. K.: Member roads of the A. A. R. meeting this week in Chicago approved the plan for the acquisition of 270,000 new freight cars in 1942 and 1943—and the builders are urging that, for maximum production, they want these orders on their books as soon as possible—so they can know definitely what to plan for. Also for maximum production, the builders do not want a lot of small lots—1000 or more of each type is what is required for top efficiency by the builders. Meantime the car program is being seriously delayed by slowness in deliveries of steel.



. . . worth planning for

Okoprene-sheathed insulated wires and cables — braidless, with a bonded sheath of **neoprene** vulcanized to the rubber insulation — provide superior protection against sunlight, ozone, chemicals, moisture and oil. They have eliminated corona-cutting and ozone generating as sources of trouble. They are easy to splice and simple to install.

All of these qualities have made Okoprene-protected wires and cables increasingly desirable to industry and now they are also essential to Defense. These, together with other Defense uses of neoprene, have resulted in a temporary rationing of this important synthetic. (Temporary, because increased production facilities now being installed will soon make available a vastly increased supply of neoprene.)

Since this has limited our production of Okoprene cables, it is necessary for us to ask you to make your plans a little further ahead . . . to place your orders as far in advance as possible and to consult more freely with our Engineering Service Department regarding the construction and type of cable which will serve you best.

The many advantages which Okoprene protection offers for many kinds of installations make these outstanding wires and cables well worth planning for.

THE OKONITE COMPANY, Passaic, New Jersey
Offices in principal cities

Freight Progress at a Glance

THE SHIPPERS SPEAK: Leading industrial traffic managers herein give their candid opinions of railroad freight service —wherein they think it excellent (as most of them do) and wherein they believe this excellence might still be polished up somewhat. Look at what they say, and let us know if your opinions are different.

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FREIGHT SERVICE RECORDS: The daily mileage per active car in 1929 was under 39—in 1940 it neared 43. Daily locomotive mileage from 1929 to 1940 rose from 91 to almost 99. Freight train speed went up from 13 m. p. h. to pretty near 17. The facts of faster service are given in detail in an article elsewhere in these pages.

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STREAMLINED RATES: Like it or not, transportation is now a competitive business—and a rate structure which used to fit monopoly doesn't fit today. The sad results—to shippers, to railroad employees and to the railroads themselves—of trying to stand up against a '41 blitz in a '14 tank are suggested in an article herein, discussing the dynamic and dangerous rate situation. The article goes on to show that the railroads are awake to what needs doing and are working valiantly and intelligently to do it—with considerably less cooperation from the regulatory authorities than that to which the public interest in the success of their efforts entitles them.

●

THE STORY, ROAD BY ROAD: What each of the principal railways in the country has recently done to give its customers a more convenient and expeditious service is recounted in an article beginning on page 905 herein. No section of the country, but has benefited from this constant activity of alert railroad managements—North, South, East and West.

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MODERN ENGINES: They run over several divisions without a trip to the enginehouse. They don't go to the shop for classified repairs until they have run 8 times around the earth. They go faster at higher speeds—and shake themselves and the track less than their lumbering predecessors did. They stop less often for fuel and water. These are some of the things the modern steam locomotive is contributing to improved freight service. And the Diesel-electric freight engine is another innovation of interesting and far-reaching possibilities. The facts in the article on page 926 ought to be in the possession of all people with a serious professional interest in transportation.

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GREEN LIGHT: It isn't so much how fast the engine goes, as how much of the time it keeps going, that gets the freight to the consignee fast. This is brought out in the article on signaling which begins on page 942. Take this centralized train control, for instance; and what it does to keep trains moving instead of standing around waiting for a meet. And power switches, which cut out stops for the shack to do the job by hand. Then there are car retarders which put zip into classification—and modern communication between the hump-master and yard enginemen which takes all the delay out of getting the cars into trains. There is much more to the signal story than this—and it all adds up to keeping the wheels turning under the boxes and gons; and how.

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THE '41 MODEL FREIGHT CAR: "Really phenomenal improvements in riding properties" characterize some of the freight car trucks now undergoing extensive tests by the railroads—so reads the report on freight car modernization on page 929 in this issue. Other developments revealed include perfection by the manufacturers of the "unit system" of car assembly and of welding technique; and, of course, the intensified utilization of improved steels, better wheels and springs, and other modern materials.

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GOOD TRACK HELPS TOO: Heavier rail makes for more economical transportation and modern-processed rail eliminates the major cause of rail failure under traffic—while detector apparatus spots bad rail so it can be replaced before damage and delay results. Deeper ballast, bigger ties, better drainage, flood control—these are some of the many ways, given in detail beginning on page 934, that the track department is doing its important part in getting today's faster trains over the road without delay.

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RRS AS TRUCKERS: Just showing that the railroads have no prejudices against trucks— in their sphere of economic superiority—an article on page 946 recounts how the railways are themselves providing 10,000 communities with truck service.

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1941 IS NOT 1917: The leading editorial herein expresses the belief that we can profit now from the experience of the last World War only if we realize the *differences* between that period and this one; not the *similarities* only. For instance, just prior to the entrance of the United States into the last war, the railroads had been suffering from an epidemic of *car shortages* —the worst that had ever occurred up to that time. By contrast, in the comparable months of 1941 there existed substantial car *surpluses.*

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CAR SUPPLY NOT INDEX: The actual number of freight cars available for service is no measure of comparative railroad capacity in two periods of time. Since 1917 the railroads have spent *8 billion dollars* in improving, not only their rolling stock, but their tracks, yards, signals and motive power for moving that rolling stock more expeditiously and more efficiently. A larger ratio of transportation in 1917 was on branch lines—where operation is perforce less efficient and more subject to delay. And, of course, the railroads have not only better tools with which to move cars now than they had in '17, but they also have the benefit of far greater experience and study in the development of improved *methods* for doing the job.

FED. CONTROL A FLOP: The word is going around that "if the railroads fall down the government will take them over; and if it takes them over this time it will never give them back." The editorial herein asks, in effect, what there is about any problem which may develop in regard to the railroads which would be in any way solved by government operation. In 1917 when the railroads were privately operated they handled about 9 per cent more traffic than in the preceding year—whereas, in 1918, under government operation *supposedly brought on by the railroads having "fallen down,"* the increase in traffic handled by them was only 1.3 per cent; which certainly is no miracle. The assumption that government operation really contributed anything to greater transportation efficiency in the last war is a fable—busily propagandized by socialists, but without any substance in fact.

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THE RRS DID IT IN '29: The railroads are already doing a far larger transportation job than they did in either 1917 or 1918 (under the much-touted government operation in the latter year). For instance, in the first two months of the current year the railroads handled *with a substantial car surplus* 23 per cent more freight traffic than they moved in the first two months of government operation in 1918. They did this by getting 56 per cent more service (net ton-miles) out of each car. The carriers in 1929 did a bigger job than they are going to be called on to do this year. True, they have fewer freight cars to do the job with than they had in 1929 but they are *getting 20 per cent more performance per freight car than they did in '29.* The articles in this issue disclose how this has happened.

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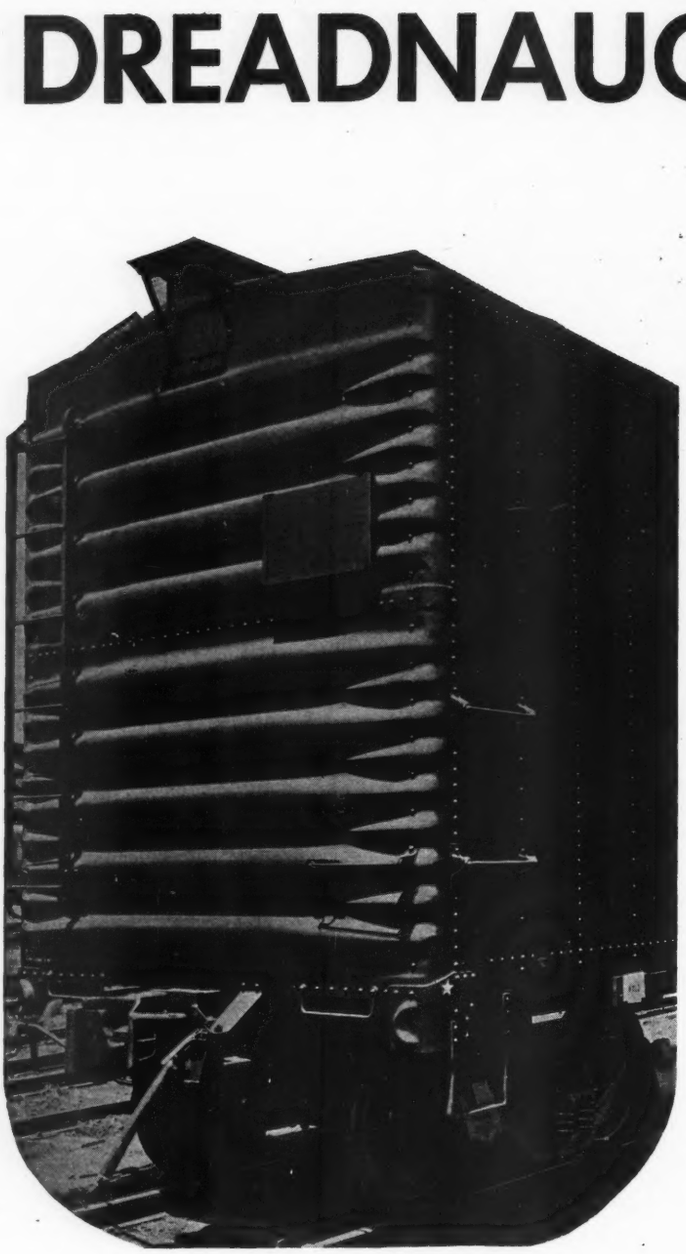
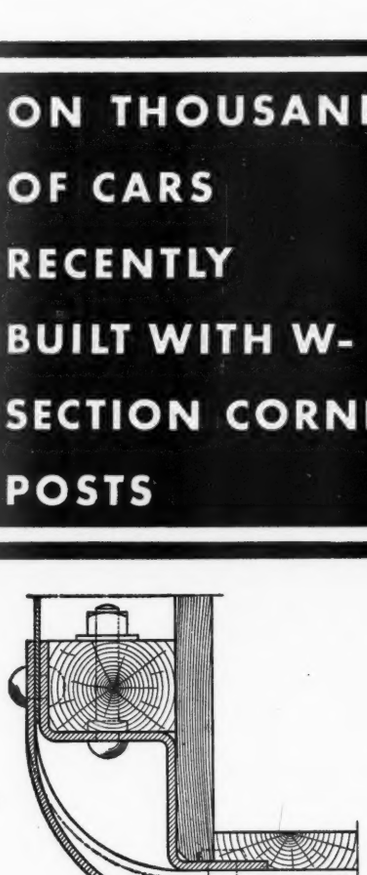
BANISH THE JITTERS: In sum, there is no reason for being frightened at a prospective "falling down" by the railroads; or for believing that government operation would be any sort of cure for such a condition even if it should befall. Instead of malicious rumors and slanderous canards on honorable and able railroad men by journalistic scavengers, what is needed is *co-operation to assure the most effective utilization of existing facilities* and the necessary priorities to provide the materials needed to complete on schedule equipment now ordered or planned for. Each shipper can do his part to protect the supply of transportation (1) by loading and unloading cars promptly, (2) by loading cars as heavily as possible, (3) by loading and unloading freight six or seven days a week, instead of only five. Such co-operation—plus a cessation of production stoppages (such as the coal strike) which cause traffic to "bunch up"—will assure maximum effectiveness of railroad service. Other aspects of the relations of the railroads to the shipping community in a time of national peril are discussed in an article on page 918. There is nothing which government operation could do in the present transportation situation except to make it worse.

Round Corner

DREADNAUGHT ENDS



ON THOUSANDS OF CARS RECENTLY BUILT WITH W-SECTION CORNER POSTS



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The Week at a Glance

WAGES vs. JOBS: The effect of the proposed increase of 30 per cent in the wages of train and engine service employees is analyzed in the leading editorial herein—and the conclusion is reached that the project is a suicide pact on the part of those who ask it. Consider all the eloquence of the union leaders (which is wholly sound) against the St. Lawrence Seaway—but the Seaway wouldn't hurt the railroads or railroad jobs a particle more than a large increase in railroad wages would. Railroad jobs are hit just as much by boosting railroad costs as they are by artificially lowering the other fellow's. What consistency is there in the unions' defending railroad jobs with one hand (against the Seaway addicts) and, with the other, doing the same thing to the railroads' competitive ability that the Seaway would do? There is something in the Bible about the mote in the other man's eye and the beam in one's own which seems to cover this case perfectly.

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"UNIONISM AS USUAL": People who know the unfortunate facts about the outlook for the railroads and railroad jobs are far more deeply concerned with putting them in a position to meet the tough conditions which lie ahead than they are in grabbing a momentary windfall—most of which the tax collector would take away anyhow. The socialistic policies followed for two decades by our government in transportation show no sign of let-up. But, quite likely, may be largely increased both by the St. Lawrence Seaway, "superhighways," and other schemes that are enumerated in the leading editorial herein. Jobs are killed off quite as quickly by increasing railroad costs as they are by increasing the subsidies to competing forms of transportation—and the employee with the foresight to see a year or two ahead cannot view a large increase in wages at the present time as anything but his future ruination. "Business as usual" won't work now, and neither will "Unionism as usual."

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LIVING COSTS: Living costs so far have risen less than 3 per cent since the outbreak of the war in Europe and they are actually 2 per cent lower than they were at the time the last increase in railway wages was granted in 1937. In purchasing power, the wages of the average railroad employee were 26 per cent greater in 1940 than in 1929. That is, they were that much higher for the employees who were working—but there were 700,000 employees who were working in 1929 and who were not working in 1940, and it was high wage rates and subsidized competition which very largely destroyed all those jobs.

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FINANCING EQUIPMENT: The railroads, on the basis of present earnings, are financing with their own credit and out of their own pockets and at no expense to the taxpayers all the increase in capacity required of them to handle defense traffic. As the leading editorial herein points out, a large increase in wages would reduce railroad earnings to the level of the bottom of the depression and the carriers would have to turn to the taxpayers to finance their defense efforts. Would there be any justice in this—either for the railroads or the taxpayers?

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***YOUR* BARGE LINE:** The Inland Waterways Corporation—the gift of the American taxpayers to well-clothed, well-fed, well-housed shippers—reports a net loss of a little over a quarter of a million dollars in 1940. If you would add to that a reasonable toll for the use of improved rivers, for which the Corporation pays not a farthing; and taxes on the huge investment the Corporation either owns or uses—then the *real loss* would be known. The Corporation boasts of its "savings" to shippers—which are not real savings at all, but simply money taken away from railroads and their employees and given to others under a set-up which, however legal, is morally equivalent to a racket.

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HARRINGTON CLAUSE: The I. C. C. this week applied for the first time the "job protection" clause inserted into last year's Transportation Act at the insistence of the transportation brotherhoods. The case involved the purchase of a short line by a Pennsylvania subsidiary, and there are other cases shortly to follow which will also have provisions in them to similar effect. The main constructive feature of the act—the provision for a competent Transportation Study Board—has been sidetracked by President Roosevelt, but the restrictive portions of the act apparently are to be given full force and vigor.

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OPERATING GET-TOGETHER: Chief operating officers of the principal railways had a meeting in Chicago this week to talk over the big job they have ahead of them. On the top of the docket was the movement of this year's grain crop. There are cars enough for it, but the task has been complicated by the government's moving the carry-over crop to Eastern and Southern storage. Numerous practical plans were considered by the operating men for increasing the load per car and to cut down on all varieties of car detention.

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RULE CHANGES: Most of the Eastern railroads have served notice on the transportation unions of changes in working rules—in order to permit switch engine tricks to be begun at any hour of the day; to allow the use of road crews to do incidental switching without penalty payments; and to provide for the handling of freight in passenger trains without additional compensation to crews. The roads also seek to put a 30-day time limit on claims for compensation under the working rules. The changes sought are in rules under which the roads have been most grievously nicked by Adjustment Board referees.

POOL EQUIPMENT ORDERS: The Railway Business Association wants the railroads to cease placing their equipment orders individually, and when and where they please, and, instead, to have the orders placed through the A. A. R. The association could thus combine several orders for similar equipment and put them where maximum productive efficiency could be secured by the manufacturers. The R. B. A. also asks that unnecessary variations in specifications be eliminated, that the carriers continue their search for substitutes to be used for scarce materials, and that the railroads assume responsibility for getting the necessary priorities from OPM.

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GOOD FOR EVIL: The A. A. R. has offered the use of some Diesel-electric locomotives for power in the T. V. A. area if it turns out that these locomotives can meet the requirements. Electricity is running short in various places where government policy has induced reliance to be placed on hydro-electric power, which dries up when it quits raining. Just as the railroads have had to rescue traffic stranded on barges in dusty rivers—it now appears that they may be needed to throw a life line to the T. V. A., one of the purposes of which is to put the railroads out of business.

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FACTS (?) FOR EMPLOYEES: The May 27 issue of the paper "Labor" lies before us as we write. Some of the headings read as follows: "Soaring Living Costs"; "Railroads Leading Profit Procession"; "Freight Loadings Zoomed." The actual truth is that living costs are less than 3 per cent higher than they were when the war broke out in Europe in 1939—and they are 2 per cent *lower* than they were at the time the latest wage increase was granted in 1937. The so-called "profits" of the railroads are running at the rate of only around 4 per cent on the investment and for 10 years have averaged only about 2 per cent. Freight loadings in April were 12 per cent greater than in 1940—*but* they were 30 per cent *less* than in 1929 and less, even, than in April, 1930 and 1931. How can railway employees be expected to make wise decisions *in their own interest,* when the facts they are given upon which to base their opinions are so distorted? Trucks in April handled 38 per cent more traffic than in April, 1940.

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TRUCKING UP 38%: In April the trucks hauled 38 per cent more freight than they did a year ago. By comparison, railroad loadings—hit harder than the trucks were by the coal strike—were up only 12 per cent in that month. Of course, railroad loadings are now making a much better showing—but the trucks still seem to be gaining about 50 per cent faster than the railroads are; in spite of the fact that most of the increase in production has been in heavy goods which normally would be expected to move by rail rather than by truck.

The railroads paid $21,000,000 in damage claims in 1940

Many of these claims were due to rough-riding freight cars caused by the uncontrolled oscillation of all-coil spring groups.

Simplex Snubbers control coil spring action . . . they make freight cars ride smoothly . . . . they protect the car, its contents, and the track . . . a three-way saving.

SIMPLEX
THE LONG LIVED
SNUBBER

LOWERS MAINTENANCE COSTS

AMERICAN STEEL FOUNDRIES

The Week at a Glance

19,000 CARS IN MAY: More than 19,000 freight cars were ordered in May —according to detailed reports published by us during that month, and summarized in the news pages herein. This represents the largest business placed in one month since the present cycle of heavy equipment buying began a year ago. Not since 1929 has so much freight equipment been called for in any one month—with one exception (December, 1936). But orders are not deliveries—and it takes steel to turn signatures on the dotted line into rolling stock to move the freight; a fact which the duly constituted authorities recognize, and which, doubtless, they will act upon as quickly as they can.

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MOTIVE POWER: Locomotives for which orders were placed in May came to 101—28 of them steam and the balance Diesel-electric (10 of the latter being 2000 hp. and up). Most of the steam jobs were big fellows (twenty 4-6-6-4's for the U. P.). So far this year locomotive orders add up to better than 500. There were 32 passenger cars ordered in May; 360 in the first five months of the year.

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MORE $ FOR EMPLOYEES: Indication that railway employees are already "getting theirs" from the current upswing in (defense) traffic is given in the detailed four-months' earning figures published elsewhere herein. For example, in April alone the carriers paid out $29,000,000 dollars more for operating expenses than in April, 1940, and probably, better than 18 million of that 29 went for more wages to employees. There were 96,000 more names on the payroll in April than a year ago and, quite likely, the average man drew more because of less short time. Meanwhile, earnings on the railroad investment slipped a little—being at the annual rate of about 3 per cent in April as compared with 4 per cent in March. What kind of a situation is it when an industry as vital as the railroads is not able to earn even 4 per cent at a time of unprecedented industrial activity? Well, anyhow, it is better than the first third of last year when the annual rate of return was only around 2.3.

●

"ORDER MORE"—BUDD: The railroads are urged by Ralph Budd to be generous with their car orders. They are assured that the responsible government officials are aware that they can't move goods without cars; and hence "it must be assumed that the necessary materials" will be allocated to the car builders. Meantime, the A. A. R. is looking into the idea of putting some wood into cars, in place of steel, if it can be done consistently. The President's expert observer on steel, Gano Dunn, has made another report on the capacity of that industry (summarized in the news pages herein). According to this authority, the steel makers will fill direct defense demands and in 1941 will fall short less than 2 million tons of filling *all civilian* orders as well. Some fewer pleasure autos and tin cans (just for instance) and there ought to be plenty of steel to fill all really necessary calls. But somebody down there at Washington has got to route the stuff where it ought to go; and it looks like, whoever he is, that guy ought to shake a leg.

●

PLUCKING MORE FEATHERS: The Southeastern carriers have followed the lead of the Eastern roads by serving notice on the transportation unions that they propose to modify certain rules which, as interpreted by Adjustment Board referees, necessitate the employment of useless help. Also, the Southern roads propose to do away with restrictions on the time when yard tricks may be started—and other hampering limitations which make operation difficult and result in pay without equivalent useful service.

●

UP GO ACCIDENTS: Not too encouraging is the I. C. C. report on April accidents, summarized in the news pages in this issue. Train accidents totaled 587, as compared with 490 in April, 1940. Employee and passenger fatalities made a favorable showing, but there was a big jump in deaths to trespassers; and non-fatal accidents to employees rose pretty near 33 per cent.

●

COSTS FOR PRICING: Leaders in the field of railroad accounting can take a great deal of satisfaction in the report in our "traffic box" on the editorial pages herein. A leading authority in the field of cost accounting is there quoted as making a clear-cut distinction between the allocation of expenses for formal accounting purposes, and that which is not only proper, but *scientifically requisite,* for sound pricing practice. If memory serves, the position taken by this authority is substantially that which leading railroad accountants were defending a dozen or more years ago in the Ex Parte 91 investigation—and getting themselves called moss-backs by some cost accounting people (and superficial enthusiasts on the outside) who had not yet arrived at maturity in thinking this thing through. For that matter, some of the finger-pointers are still in the short pants stage—"perennial freshmen" we used to call their type at school out in the dry-grass country.

●

5 CARS OF DYNAMITE: Opening to traffic 19 miles of modern railroad through country as rough as you find in Southern Missouri, in six months from the time the locating engineers first got a look at the job gives the raw material for a thriller of a construction story such as your observer hasn't read in many a day. Turn over to the right until you see the piece about Uncle Sam building a railroad. Read a couple of paragraphs of it, and then see whether you can quit. (Your reporter couldn't, and he knows next to nothing about engineering work; only enough to marvel at the ingenuity of those fellows—and how they contrive to make the dirt and rocks fly once they get the green board.)

CAR SUPPLY: The prospective car situation is nothing for anybody to get jittery about—but it hasn't anything in it to cause railroad men and shippers to rest easy either. Such is the conclusion of the leading editorial herein, which calls attention to the false and scary rumors which enemies of the railroads and private enterprise are circulating; and suggests that these fellows will expand the slightest tightness into a panic if they can, and try to use it as an excuse for socializing the railroads. So shippers and carriers should co-operate to keep these birds from having anything to holler about.

●

THE "RILEY": Pictured and described elsewhere in these pages are the handsome dining and observation cars which the New York Central built in its own shops for the streamlined "James Whitcomb Riley."

●

PENSION OUTLOOK: The actuaries who looked over the railroad pension set-up are leery about it, and think the tax will have to be greatly increased to maintain present benefits. But Murray Latimer of the pension board doesn't want to rush into following the experts' advice just yet. He wants to wait a while and see if retirements don't slow up—or if employment of younger men by the railroads won't help the picture somewhat. We wonder if the "old heads" realize what they are doing to their pension prospects when they ask for large wage increases which will maximize lay-offs when the defense effort ceases.

●

HERE COMES THE DITCH: Well the iniquitous St. Lawrence fraud, draped in national defense camouflage, is now before Congress. We didn't believe it for a moment when the rumor went around a few weeks ago that this project was to be shelved—although, we regret to say, some opponents of the scheme were taken in; which is obviously the reason why the false report was circulated. The purpose of the political group supporting this measure is to establish socialism in America, and anybody who thinks they would be patriotic enough to put aside this ambition because of the military danger the country faces, just doesn't know the kind of people they are.

●

JUDGING HIS OWN CASE: A Senate committee, headed by Senator Johnson of Colorado, has gone into an abandonment case in the Senator's home state and has come to a different conclusion than the I. C. C. did with respect to the advisability of this abandonment. These abandonments are very seldom popular with the home folks, and to have them passed upon by a committee of men whom the voters can relieve of their jobs, comes under the general heading of letting a man be the judge in his own case. It is not in the tradition of Anglo-Saxon justice, but, then, that tradition is not held in the esteem it once was.

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Okonite wires and cables have always been distinguished for long life, exceptional electrical characteristics, high insulation density and perfect centering of conductors.

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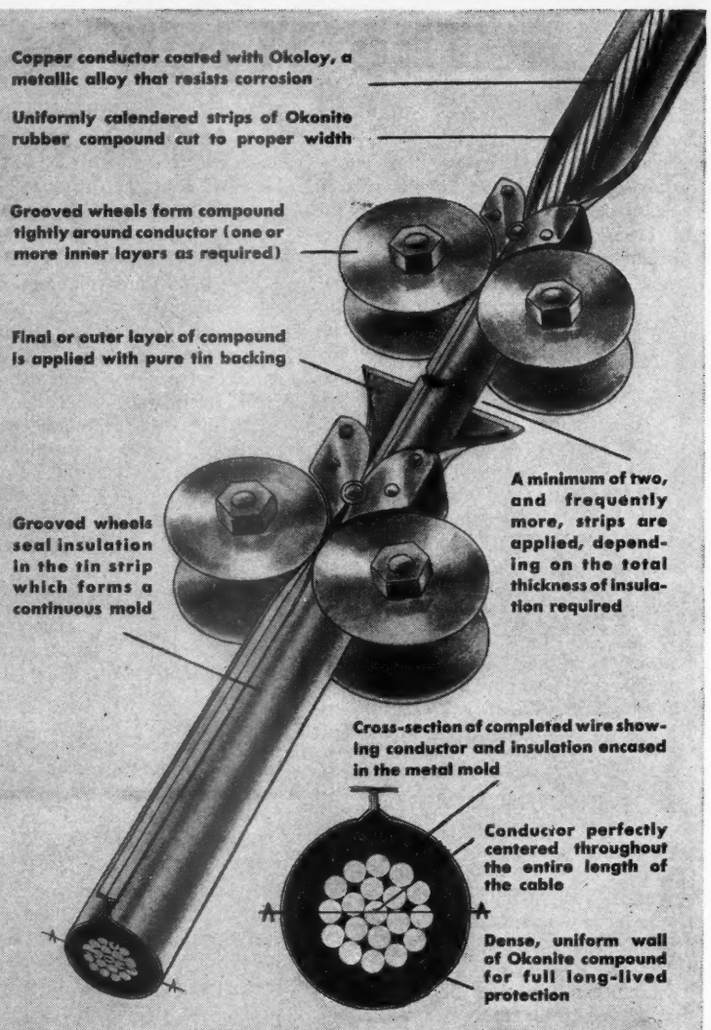

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The Week at a Glance

COINCIDENCE?: Two entirely separate and distinct "emergency" boards have criticized parties to wage disputes who have refused to submit their cases to arbitration. In one case it was the unions and, in the other, management which got the barrel-stave. The "emergency" boards said, in effect, that disputants oughtn't to run to the President of the United States with their troubles but should agree on impartial arbitrators to settle them. If they could get such of a somewhat higher caliber than have occasionally been picked for the Adjustment Board, there might be something in the advice. Arbitration, theoretically at least, is adjudication and thus is of a higher moral order than mediation which, also theoretically, *may* be simply a form of "appeasement."

●

STEEL FOR FREIGHT CARS: Leon Henderson—head of what is pronounced O'Pax, and means he has the power to allocate all scarce materials for civilian needs after the direct-defense orders get theirs—has put steel for railroad cars at the top of his preferred list. That is, after steel needed for guns and tanks and ships is supplied, railroad cars come next and ahead of "other civilian requirements." The OPM is expected to do a little advising also, which may divert to car-building some of the steel now going for less urgent needs. Details are reported in the news pages herein and an article gives some pointers on getting material.

●

PASSENGERS IN MARCH: Class I bus lines in March had passenger revenues of somewhat better than 10 million dollars —up about 14 per cent over last year. Railroad passenger revenues in March were up about 20 per cent over 1940.

●

PIPE LINES HIGHBALLED: Continuing the build-up by which large surpluses of transportation are being accumulated under the urge for national defense, the House in Washington this week passed the Cole bill to stimulate pipe-line construction. Some of this proliferation of transport facilities (as, for instance, ships —and, maybe to some degree, pipe lines) is, possibly, unavoidable. But the more there is of it after the emergency passes, the bigger the headache will be. And that is all the more reason for holding up such nonsense as the Seaway, which will add to surplus capacity without contributing anything to defense.

●

STARVING THE INVESTOR: The wages of railway labor, as measured in cents per hour, are 13 per cent higher than they were in 1929; as measured in purchasing power they are 28½ per cent above 1929. Meantime, the average "wage" of the railway investor for the past decade (which is the way investor's "wages" have to be considered, and not just by the month or year) has been only 1.63 per cent, or 66 per cent *less* than his 1929 wage. The shape of railroad credit, and the curtailed investment in improved railroad facilities, shows that the investor cannot and will not keep working on the railroads for the kind of pay he has been getting. Since his collaboration is indispensable to the continuance of the railways' employing power, what is the sensible policy for employees to follow in the present situation? Hardly that which is being followed—as the analysis in the leading editorial herein makes clear.

●

FEATHERBEDS VS. DEFENSE: Cost of living, alleged "sufferings" during the depression (the actual suffering having been done by the unemployed), railway "profits," comparable wages in other industry, improved "productivity of labor"—all of these, upon examination, turn out to be phony excuses upon which to base a wage claim. Actually, as the editorial analysis herein makes clear, the shoe is on the other foot. The time has come when national productive efficiency requires that the inflation be taken out of "featherbeds" on which some highly-paid and supernumerary railway employees are now reposing.

●

WHO SUFFERED?: Advances in railway wages are being claimed on the grounds that the employees suffered during the depression. Actually, the only ones who suffered were those who were laid off —and wage increases can't help men who are not on the payroll. As a matter of fact, they harm them—because higher wages per hour reduce the number of men the railroads can afford to employ. Railroad employees who held on to their jobs during the depression are one of the very few classes of people who *did not* suffer during the depression. Even their temporary 10 per cent wage deduction during the depression was more than offset by the decrease in the cost of living.

●

ROOT OF ALL EVIL: Unregulated monopolists invariably upset the economy and bring hard times for everybody, including the monopolists themselves. The public has pretty well learned that lesson as far as monopolies operated by business men are concerned—but, paradoxically, monopolies of labor have been given an odor of sanctity which no other monopolists ever before enjoyed. The leading editorial herein points out that more production per employee does not indicate greater "productivity" by the employee—but improved technical efficiency. After both labor *and capital* in an industry have got a "living wage," the proceeds of improved technical efficiency ought to be passed on to the public in *lower prices.* This is the only way to spread "purchasing power" around effectively.

●

WHEAT CROP SURVEY: The readiness of the railways to cope with this season's wheat crop, despite the unusual difficulties (arising out of storage for the carry-over), is examined in an article herein by our transportation editor, which includes a report of some of the interesting information which came to light at the recent meeting of the Shippers' Advisory Board in Wichita.

CAUSE OF WAR: If either labor or capital captures all the proceeds of improved efficiency (and omits the consumers) the economy becomes *unbalanced;* and unbalancing the economy leads to hard times for everybody. Probably wars and hard times will persist in the world until such time as the people learn that selfish monopolistic practices cannot be tolerated —whether they are practiced by business men, by politicians, by labor unions, or even by nations. Such practices do not fit in with economic abundance and the people, having tasted such abundance, will never be peaceful till it is restored. It cannot be restored so long as monopolies of any kind are encouraged, instead of regulated or suppressed.

●

A "HOW TO" MEETING: How to pre-select men who will turn into efficient employees and supervisors, how to arouse wholesale enthusiasm of employees in improving the efficiency of railway operation, how to speed up and economize in handling l. c. l., how to cut down accidents and rough handling were some of the many practical pointers given to operating officers at last week's meeting of the superintendents, reported elsewhere in these pages. Ralph Budd, C. H. Buford and Samuel O. Dunn gave the operating men the benefit of their study of the situation with respect to transportation capacity—and Mr. Budd went into some detail into what lies ahead with respect to particular commodities.

●

NO "GREED" HERE: It is significant to note that the considerable fortune of Arthur Curtiss James, after relatively small bequests for the "social security" of his dependents, is to go for educational and other philanthropic purposes. The day of the accumulation of large fortunes is past—now the government gets it and such "philanthropy" as is practiced by the new "magnates" has a political tinge. Can anybody picture a bunch of politicians with the imagination and the magnanimity to engineer the work for humanity, say, of such an institution as the Rockefeller Foundation. Large fortunes, ultimately, have had an end which is the exact opposite of the "greed" which is popularly supposed to be their outstanding characteristic. In the long run, just as much—or more—greed has been turned loose under the new system which taxes the money into the hands of the politicians. And it remains to be seen whether, by preventing such accumulations by able private individuals, the politicians may not also have destroyed much of the incentive which brought continuing rapid economic progress in this country, in which everybody shared.

●

THE CORPSE STIRS: President Roosevelt has asked Congress for an appropriation for the Transport Study Board —but nominations he sent to the Senate for membership on the Board are still pigeonholed there; and no name has been substituted for Coy, who now has another job.

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The Week at a Glance

CAR BUILDERS GET A-3 RATING: O. P. M.'s Director of Priorities, E. R. Stettinius, Jr., has given builders a blanket A-3 preference rating for scarce materials needed in freight-car construction. It puts their requirements in a class like that to which requirements for merchant vessels were recently assigned.

●

CARLOADINGS: For the June 14 week—862,975 cars, up 1.2 per cent from the previous week, 21 per cent above the corresponding week last year, and 36 per cent above the comparable 1939 week.

●

"COSTS" FOR RATE-MAKING: Again our "traffic box" emphasizes how "costs" for competitive rate-making are a horse of a different color from wholesale routine cost "accounting" of the Ex Parte 91 variety on all railroad traffic. The latter seems as questionable to our competitive traffic scouts as it ever did; but they remain to be convinced that the railroads, for their own protection, should not have data compiled in a uniform manner on the undeniably-variable costs of handling business competitive with other agencies of transportation.

●

SCIENTIFIC GRADING: How railroad grading reached new scientific levels on the Southern Pacific's relocation around Shasta Dam in Northern California is told in an illustrated article herein. With more than five and one-half million cubic yards of excavation in cut and fill construction in rough mountainous territory to deal with, the Interior Department's Bureau of Reclamation applied the science of soil mechanics in connection with its use of modern grading equipment to produce compact, water-tight, non-subsiding fills and free-draining stable cuts.

●

ANOTHER TRUCK-MERGER TRY: Seven of the fifty-six motor-truck carriers whose plan to merge into a proposed $22,500,000 Transport Company of New York was rejected by the Interstate Commerce Commission last year, are getting ready to file another consolidation application. The new combine, in its initial stages at least, wouldn't be as big as the one rejected; but it wouldn't be small—the seven participants operate 3,500 vehicles along the Atlantic seaboard from Maine to Florida, and employ more than 6,000 persons. This time they plan to steer clear of promoters and financing methods which met with I. C. C. disapproval.

●

NOT AN A-1 PRIORITY: Launching the Roosevelt Administration build-up of the proposed St. Lawrence seaway and power development as a "national defense" project, Secretary of War Stimson refused to go "all-out" for interested members of the House committee on rivers and harbors. He would not say the project is "essential" to our defense, but he nevertheless insisted that it is a "very valuable" work which should go forward now. Other "big-name" supporters who went on record at the hearing's opening sessions were Secretary of Navy Knox, Governor Lehman of New York and Assistant Secretary of State Berle.

●

THE "DEMOCRATIC" WAY: Mr. Berle had an ingenious explanation of the decision to submit the present proposal in the form of an agreement which can be approved by a majority vote in both houses of Congress, rather than in the form of the previously-rejected treaty which would require ratification by a two-thirds Senate vote. It seems that the project's important domestic phases convinced the present Administration that "the considered opinion of the House of Representatives as well as that of the Senate" was advisable.

●

"ALL-OUT" EFFORT ON L. & D.: Giving their annual convention a genuine "national defense" touch, members of the Freight Claim Division, Association of American Railroads, meeting last week at Denver, telegraphed to President Roosevelt and Prime Minister Mackenzie King of Canada their pledge of "all-out" aid to guard against transportation delay and damage to material vital to defense. Moreover they went on to make good by starting to formulate plans for greater supervision in all phases of freight handling, and outlining special studies to be made of loading methods for defense materials.

●

CAR SUPPLY: The car supply is today's urgent question, and the railroads are down to "brass tacks" in their unrelenting efforts to solve it. That was manifested in talks at the symposium held in connection with the recent Superintendents Association meeting; and in reports of discussions at May 26's Chicago meeting of chief operating officers. Both meetings, as reported herein, brought forth specific and practical suggestions for the achievement of that more efficient use of cars which will avoid a fall shortage and thus render mute certain groups who are ready to plug for government operation.

●

DON'T LET THEM SCARE YOU: Railroad men and their loyal shippers have no reason to become terrified by socialists on the public payroll who are ready to use any pretext of an alleged "breakdown" as an excuse for government operation. As the leading editorial points out, those bureaucrats will remain disappointed by the good job done through the increasingly more efficient use of the augmented car supply. That the good job becomes ever better is demonstrated by May ton-mileage figures which measured an all-time high in efficiency. Continued candor in discussions of car supply problems and cooperation of shippers in avoiding wastes in equipment utilization comprise the right lead; but there must be a follow-through to make clear to the intelligent public the facts about private as against government operation of the railroads.

RECIPROCITY: Railroad men make good telegraph men, and vice versa. So Western Union, having lost Roy B. White to the Baltimore & Ohio, has turned again to the railroad industry for a president, electing Albert N. Williams, who has been president of the Lehigh Valley since January, 1940. Mr. Williams' railroad career is the subject of a feature article herein.

●

WHO'S MOVE?: Proposals to move the Interstate Commerce Commission, Railroad Retirement Board and other agencies out of Washington in order to provide office space for the federal government's expanding national-defense organizations have produced bad cases of the jitters in I. C. C. and R. R. B. staff members, and "camp followers" of the former. The Bureau of the Budget's recent "show-cause-why-you-shouldn't-move" letter is responsible; but President Roosevelt says the matter is only in the study stage, and he has been unable to understand why the press has picked on the poor old I. C. C. Gossip has had it that the commission would be among the first agencies shifted, because the President's friend, Harry Hopkins, administrator for the lend-lease program, would find its air-conditioned building quite suitable for his operations.

●

RIDE TRAINS; LIVE 4,000 YEARS: Presenting what he called a "brain wave" to his audience at this week's luncheon in connection with the 1940 awards of the E. H. Harriman Memorial Medals, Judge Fletcher calculated that the average American citizen could ride on a passenger train traveling 50 m. p. h., 24 hrs. a day, and go 4,000 years before an accident occurs. The Association of American Railroads' vice-president and general counsel is chairman of the Committee of Award, and he was on hand to present the medals to last year's winners—the Norfolk & Western, the Ann Arbor, and the Missouri-Illinois.

●

NICKEL-CLAD TANK CARS: Marking a new development in railroad equipment, five nickel-clad steel tank cars have been completed by the American Car & Foundry Company. In them will ride chemicals and other products whose color and purity must be protected against metallic contamination; the layer of nickel on the interior of the tank being designed to provide such protection. The tank construction and the several other structural features of interest are described on another page.

●

MAKING MOTORISTS PAY: Damage to railroad property by motorists is costing the railroads many millions of dollars annually, and some roads are being successful in collecting for such damages. One recovered $168,000 during the 1931-1940 period while another got $25,000 in 1940. So F. A. Kelly, chief claim adjuster of the Santa Fe, told members of the Association of Railway Claim Agents at last week's Denver meeting which is covered herein.

No list of "famous firsts" in railroad history could be complete without this 1893 picture. It shows the first low voltage, motor operated automatic semaphore signal ever used on any railroad in the world. Its inventor, Mr. J. W. Lattig received the medal of The Franklin Institute for a major contribution to the increased safety and speed of railroad service.

For the insulated wire used to operate this signal the inventor relied on Okonite because, in his own words,

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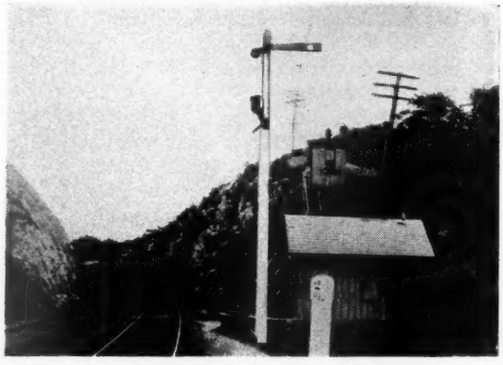

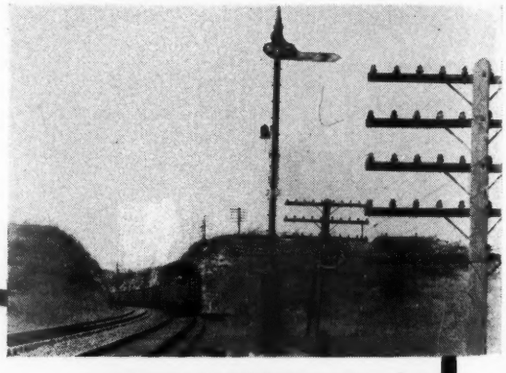

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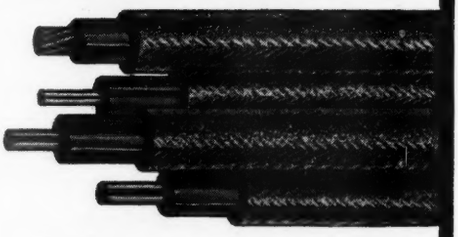

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The Week at a Glance

WRINGER GAGE: How the effect of the wringer is to be reflected in the property accounts of reorganized railroads has been decided by the Interstate Commerce Commission in the Chicago Great Western case. While it did not agree with the railroad position that the gage should be in the nature of a "reserve" account on the balance sheet's liability side, it did recognize that the original cost figure should be preserved, and thus authorized a set-up on the asset side which will show the write-down as a deduction from the statement of original cost; although only the net figure, representing the commission's finding of worth, is to be extended as a final balance-sheet item entering the total assets.

●

SHASTA BRIDGES: The bridge engineering, a stand-out among the many features of the Southern Pacific's 30-mile relocation around Shasta reservoir in Northern California, is the subject of this issue's feature article on that project. On the new line will be more than 230 waterway structures, ranging from the highest double-deck railway-highway bridge in the world to numerous elliptical arch and rigid-frame box-type culverts, and more than 130 pipe culverts up to 60 inches in diameter. Placed end-to-end, the eight major bridges would measure 12,206 feet, the longest being 4,347 feet.

●

JERSEY LOSES AGAIN: New Jersey, chronic complainer against the equalized rate adjustment in the New York harbor area, has this time failed to convince the I. C. C. that it should require an additional charge on water-borne freight lightered to ships docking on the New York City side. But to Dissenter Eastman New York City looked like "no under dog" requiring rate-equalization props which he thinks prevent the Jersey side from cashing in on its natural advantages. Moreover, he suggested that a lighterage charge would do more than the commission's repeated admonishments (unheeded since 1917) to bring about more economical lighterage operations.

●

LOADING FORECAST: The Shippers' Advisory Boards expect third-quarter carloadings to be 14.8 per cent greater than in the comparable period last year. Their estimates by regions, given in the news pages herein, show that the biggest rise (25.3 per cent) is looked for in Ohio Valley Board territory; and the smallest (10.3 per cent) by the Atlantic States Board.

●

SOBER OPTIMISM: This keynote of last week's special Chicago meeting of the National Association of Shippers' Advisory Boards was based on the facts of the transportation situation rather than on wishful thinking. There was ready recognition of the gigantic problems ahead; but evidences of increasing co-operation to produce a winning shipper-railroad team dispelled any cause for alarm. The shippers passed a resolution of their confidence in the ability of the railroads to do the job before them; while railroad men in attendance indicated that they are still looking for business rather than "relief" of the variety which would result from adoption of Interstate Commerce Commission Chairman Eastman's artful suggestion that shippers might ease railroad burdens by giving more traffic to motor carriers.

●

WHERE 5'LL GETCHA 40: In a message read for him at the shippers' meeting by A. A. R. Vice-President C. H. Buford, Defense Transportation Commissioner Ralph Budd pointed out that the average active freight car is on the move only about 2½ hours in each 24; thus its dead time is 21½ hours. Cut the latter by one hour or less than five per cent, and the time in transit goes up to 3½ hours—a 40 per cent jump.

●

SUICIDAL IGNORANCE: That is what the leading editorial herein calls the general lack of understanding on the part of railroad employees of the basic economics of their employment. Reviewing such basic economics and examining particularly the "operating" brotherhoods' wage demand and the counter-claims of the railroads for modification of working rules enjoyed by those employees, the editorial suggests that the union leaders would not be seeking an average increase of 41 per cent if the rank-and-file had in their possession the facts of the railways' competitive position; and realized how impossible it now is to take a wage increase out of the railroads without making much worse the threat to railroad employment, which is already looming, the moment the military crisis ends. The laborers in the vineyard of dispelling the suicidal ignorance are far too few—considering the magnitude of the harvest.

●

TIMELY REPORTS: When the railroad labor organizations were making their successful fight against the proposed 15 per cent wage cut in 1938, they made much of a Railroad Retirement Board compilation showing a 1937 average "annual wage" of $1,101 for all employees who earned any reportable wages during that year—although one of the unions' own witnesses at the Emergency Board hearings admitted that the figure was "too low." Now when the drive for a 30 per cent wage increase is under way, a like compilation of 1939 data has come from the Retirement Board; and it has been hailed by "Labor" as "powerful ammunition for the standard railroad labor organizations." The "powerful ammunition" is the $1,324 average "annual wage" for all persons who had any railroad employment in 1939—including 102,388 who had work in only one month and 129,927 who earned less than $50 each during the year. But the compilation also shows that the 862,165 employees really attached to the industry, i. e., those who did some work in each of 1939's 12 months, received 87 per cent of the aggregate payroll, and earned an average wage of $1,844.

MECHANICAL MEN READY: That railway mechanical departments are on the job of seeing to the procurement, maintenance and efficient use of an adequate supply of locomotive and car equipment was manifest at last week's annual meeting of the A. A. R. Mechanical Division in St. Louis. Speeches and committee reports presented at the convention, which is covered in detail herein, reflected a bedrock disposition to see that the railroads meet impending peak demands of both defense and industrial traffic.

●

WHAT PRICE PIPE LINES?: Our "traffic box" this week takes a look at the post-emergency oil transportation situation, and suggests that it is at least worth examining whether intensive use at this time of available tank cars, moving oil in train-load lots, might not obviate the necessity for the construction of *some* of the pipe lines being hysterically proposed. After all, it is poor economy to sink large quantities of capital into facilities which are going to be needed for only a short period; and that might well be the fate of "national defense" pipe lines when the large numbers of tank vessels now being built because of the country's military necessities come back into the domestic transportation picture.

●

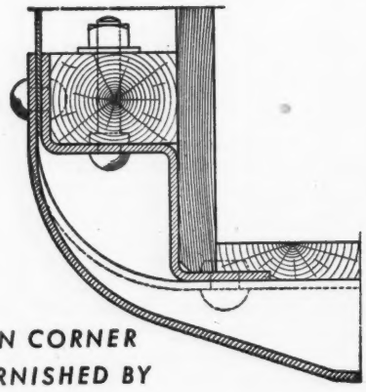
PERSEVERANCE WINS: On a third try the R. F. & P.'s affiliate—Richmond Greyhound Lines—has got an Interstate Commerce Commission O. K. on its plans to take over Peninsula Transit Corporation, bus operator in the Baltimore-Richmond-Norfolk triangle. The first unfavorable report was issued in March, 1938, when Division 5 found that the special showing required where railroads or railroad affiliates are involved had not been made. This requirement was then met, but in July, 1940, the Division found an elimination-of-competition peg on which to hang another adverse decision. Now the entire commission has approved the merger, provided Richmond-Greyhound agrees to sell a Richmond-Norfolk route to one of the protesting bus lines.

●

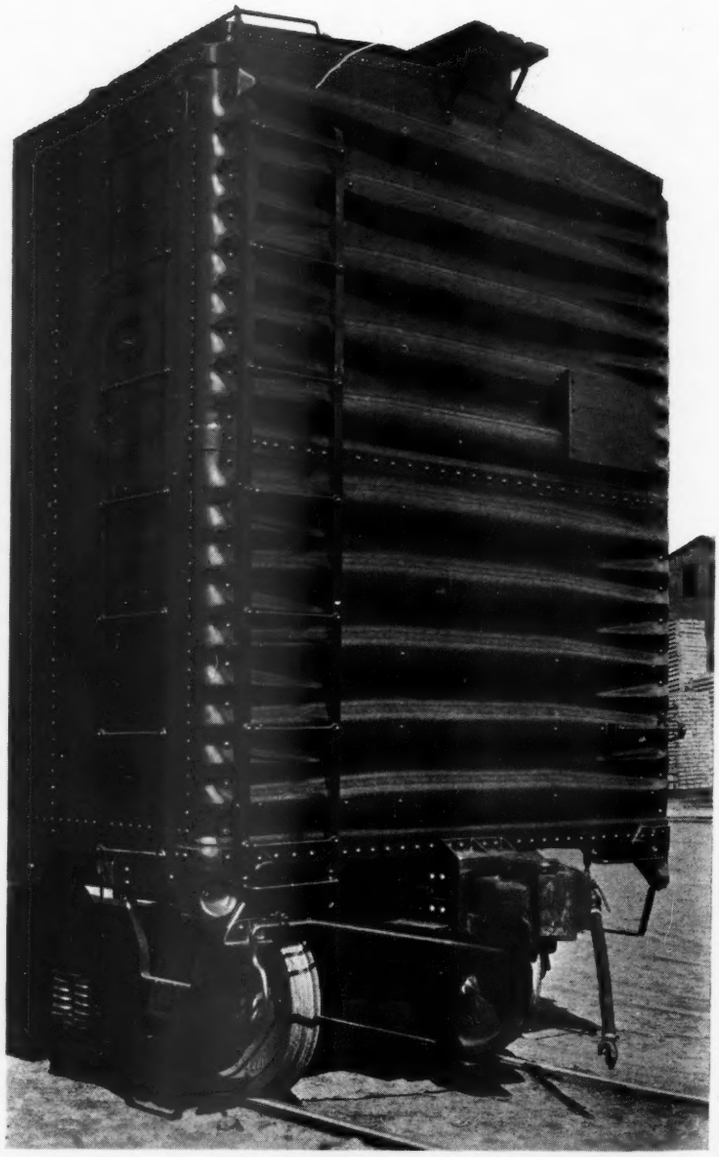
ECONOMIES BARRED?: Because the Transportation Act of 1940's Harrington "labor-protection" amendment would have deferred the expected economies for four years, the Interstate Commerce Commission has refused to permit the Colorado & Southern to lease the Fort Worth & Denver City and the Wichita Valley. The majority's reluctance to base a favorable report "on what the applicant believes will be the situation four or five years hence" drew a sharp dissent from Chairman Eastman, who suggested that if such a contention were sound, it would be "an equally sound reason for disapproving any unification which contemplated the avoidance of waste." Commissioners Mahaffie and Miller agreed with the dissenting chairman, while Commissioner Porter dissented without comment.

Round Corner
DREADNAUGHT ENDS

PROVIDE INCREASED STRENGTH IN COMBINATION WITH W-SECTION CORNER POSTS



W-SECTION CORNER POSTS FURNISHED BY BUILDER.



ROUND CORNER IMPROVES APPEARANCE OF CAR

IS SUFFICIENTLY RESILIENT TO PROTECT CAR AND LADING.

STANDARD RAILWAY EQUIPMENT MFG. COMPANY

HAMMOND, INDIANA

WORKS: HAMMOND, INDIANA NEW KENSINGTON, PA. WARREN, OHIO

CHICAGO OFFICE – 310 S. MICHIGAN AVE.

EDGEWA

Contribute *Inno*

The new Chicago, Burlington & Quincy box cars, built in their own shops at Havelock, Nebraska, are equipped with Edgewater Ring Spring Draft Gears — the Gear with maximum capacity and minimum weight. This car is one of 50 used in passenger train service.

Burlington Route

IMPORTANT FACTORS
CONTRIBUTED BY
EDGEWATER DRAFT GEARS

1—CAPACITY
High capacity provides efficient cushioning to protect cars.

2—ENDURANCE
Long gear life provides continued protection.

3—SMOOTH ACTION
Closes smoothly at high speeds or low.

4—UNIFORMITY
All gears have uniformly high quality.

5—RELEASE
Release is quick and positive after impact. Destructive surges are prevented.

6—SIMPLICITY
It is furnished as a single selfcontained unit.

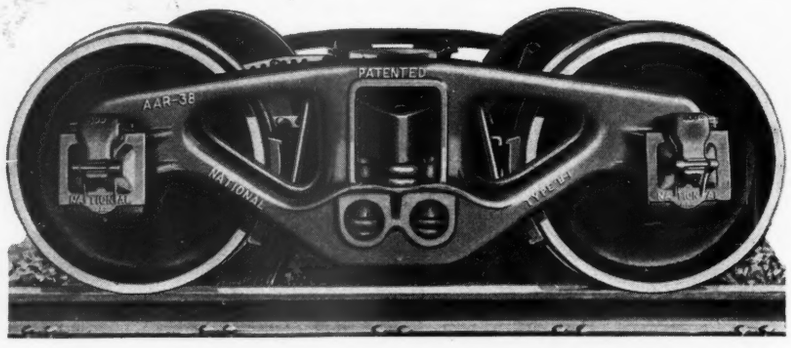
EDGEWATER STEEL COMPANY • PITTSBURGH, PA

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 110, No. 26.

National Type B Trucks

National B Truck: Established record for economy thru 10 years service on many roads.

National B-1 Stabilized Truck: Built-in stabilization controls vertical oscillations and assures easier riding in high speed service.



SAFETY • AVAILABILITY • ECONOMY

Three important factors in car operation that stand out prominently in the records of cars equipped with National Type B Trucks

National B Trucks comply with all A. A. R. requirements

NATIONAL MALLEABLE AND S

Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco
In Canada: Railway & Power Engineering Corp., Ltd., Toronto, Montreal

National Friction Draft Gears

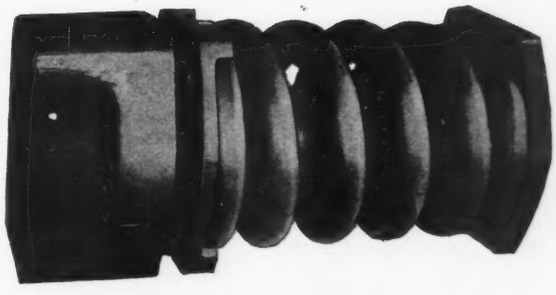
National Draft Gears are designed and built with the single idea of affording utmost protection to both car and lading under all traffic conditions.

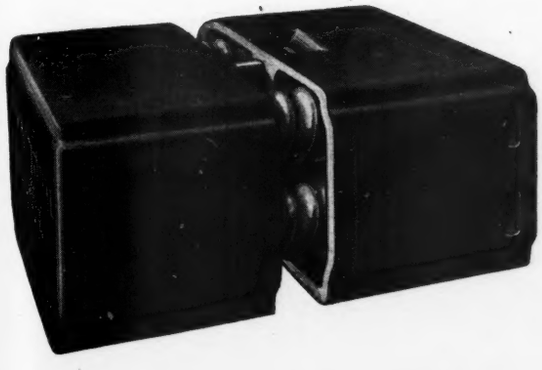
NATIONAL M-17-A DRAFT GEAR
A.A.R. Approved

The M-17-A draft gear is 22 3/8 inches long and requires one standard follower.

NATIONAL M-50-B DRAFT GEAR
A.A.R. Approved

The M-50-B draft gear is 20 1/8 inches long and requires two standard followers. This gear also may be used in certain non-standard draft gear pockets.





NATIONAL K-4 DRAFT GEAR

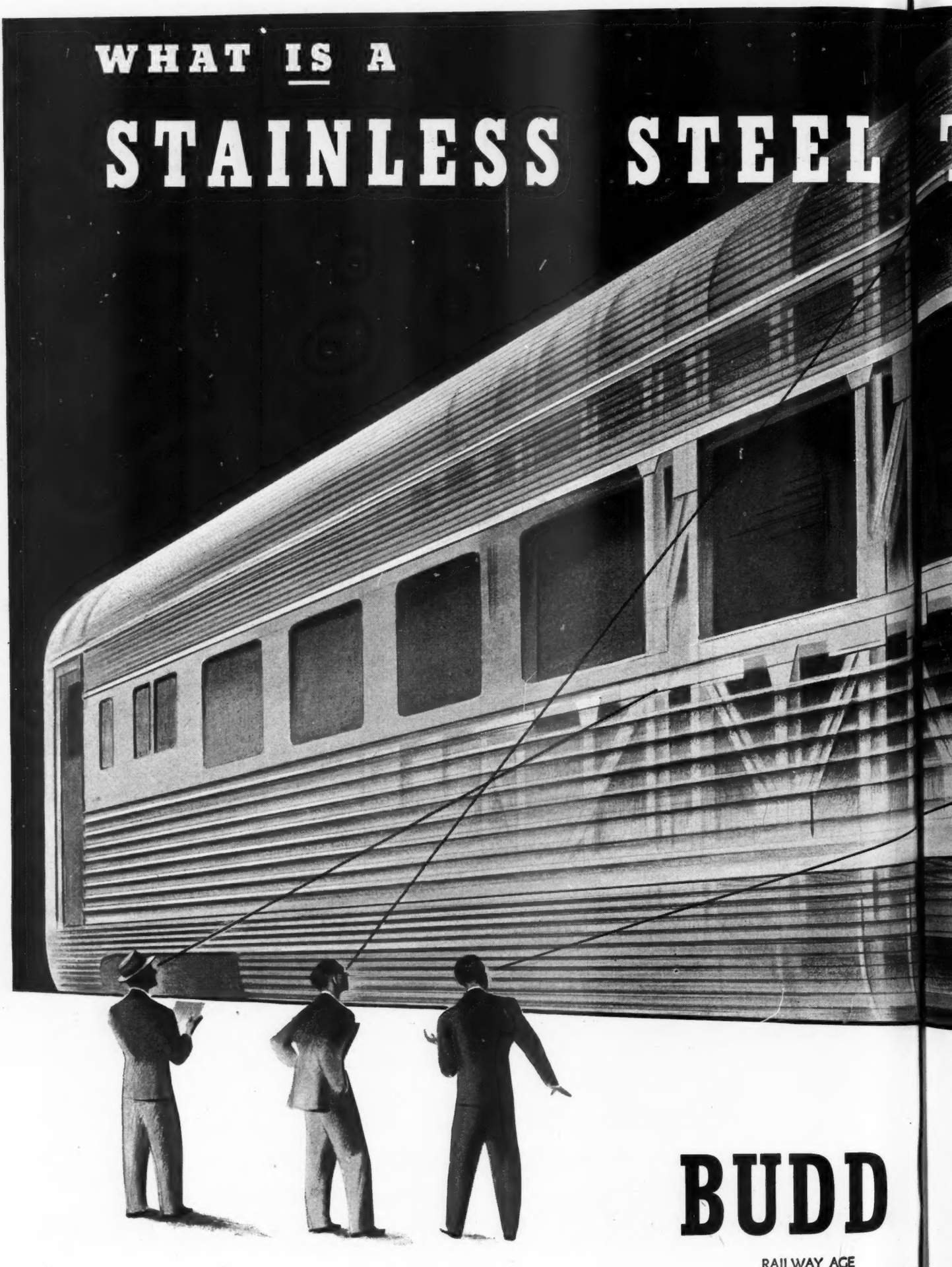
Designed especially to meet the requirements of high speed passenger service.

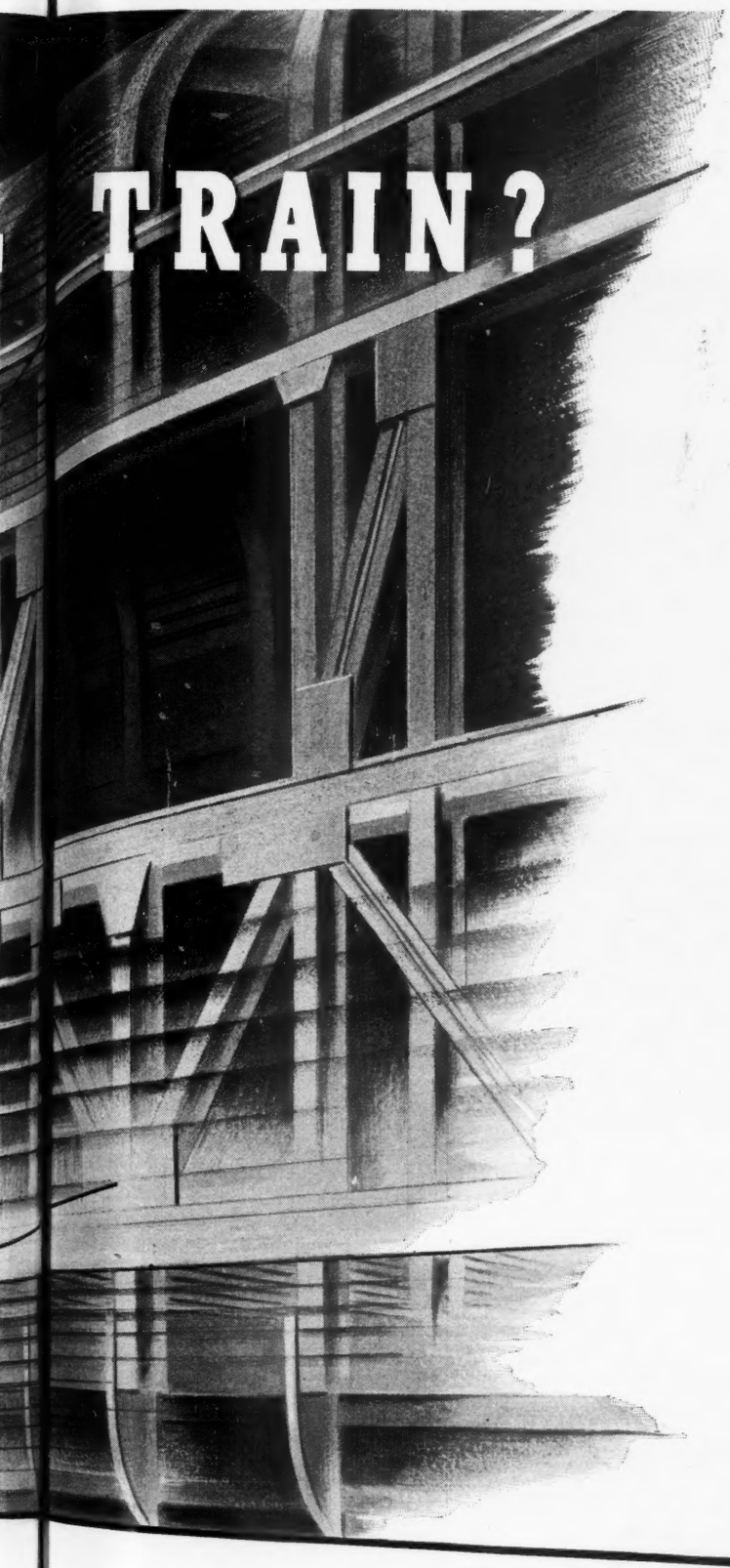
The spring resistance and frictional resistance are so proportioned that pulsations in locomotive tractive effort are absorbed by the gear, thus insulating the cars from such disturbances.

STEEL CASTINGS COMPANY

Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.
General Offices: Cleveland, Ohio

The


WHAT IS A
STAINLESS STEEL
BUDD



You've got to take off the "hide" to find out!

BENEATH the stainless steel sides of a Budd-built train are scores of stainless steel beams welded together into a virtually indestructible unit. There are stainless steel center sills. The side frames, collision posts, floors, roofs and *all other* important structural members are stainless steel.

. . . *They make a stainless steel train!*

Many trains of radically different construction inside are apt to look like Budd trains from the outside. This is because the distinctive fluted stainless steel sheathing, which has been practically a trade-mark of all Budd trains, is now being widely adopted. When used merely as a sheathing, or "hide," stainless steel has little or no structural value. It's the stainless steel *inside* that counts!

Budd builds *through and through* of stainless steel because it is the strongest known material suitable for structural purposes. And by the exclusive SHOTWELD★ system, Budd fabricates stainless steel so that the full strength and safety factors of the metal are retained.

Budd stainless steel construction and design produce truly light-weight trains at no sacrifice of strength or safety. In fact, Budd-built trains far exceed accepted safety standards.

For Budd *believes* that when the safety of railroad travelers is at stake, no car can be too strong. And Budd *knows* that a real stainless steel train is the strongest, safest railroad train that modern materials and methods can produce. ★Reg. U. S. Pat. Off.

EDWARD G. BUDD MANUFACTURING COMPANY, PHILADELPHIA

METHODS SAFELY ELIMINATE DEAD WEIGHT

"Gee, Daddy, can our car g

go as fast as that freight?"

YES SIR, freight trains *are* a lot faster than when Daddy was a boy and they carry more freight, too. Of all this, the man on the street is dimly aware. But he would be surprised indeed to hear the facts that mark the revolution in freight service that the railroads have accomplished in the past 20 years.

Briefly summarized they are as follows:—In 1940 the average amount of freight carried per train was 27.3% higher—the greatest to date. Freight train speeds averaged approximately 62% faster than 20 years ago. Gross ton-miles-per-hour reached a peak of 13,449 ton miles, 79% greater than the 1921 average. Freight locomotives attained a new high in average daily mileage. Fuel efficiency was the highest ever; fuel costs were 20% lower.

The factors in bringing about these improvements were many. More powerful and more efficient locomotives, better rail and improved maintenance of track, better signal equipment, larger capacity cars and better maintained cars. In all this development the steel metallurgists of Carnegie-Illinois have worked shoulder to shoulder with railroad engineering departments and with equipment builders, giving freely of their wide experience with railroad needs.

As the railroads face the problems which must still be met in attaining their ultimate goal of "peak efficiency," our engineers are ready as always to cooperate with you in using steel with the least possible waste, expense and delay.

U·S·S STEELS *for* RAILROAD USE

CARNEGIE-ILLINOIS STEEL CORPORATION

Pittsburgh and Chicago

Columbia Steel Company, San Francisco, *Pacific Coast Distributors*
Scully Steel Products Company, Chicago, *Warehouse Distributors*
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UNITED STATES STEEL

USS

Born to Safety— AND *Long Wheel Life!*

ARMCO's exclusive heat treating is an important step in producing safer, tougher wheels. Here a new wheel is being "oil conditioned" to uniformly improve properties throughout the rim, plate and hub.

Meet the new king of the rails. It's the ARMCO Stress-Resistant Wheel —the wheel that created new standards of safety without sacrificing an inch of mileage performance.

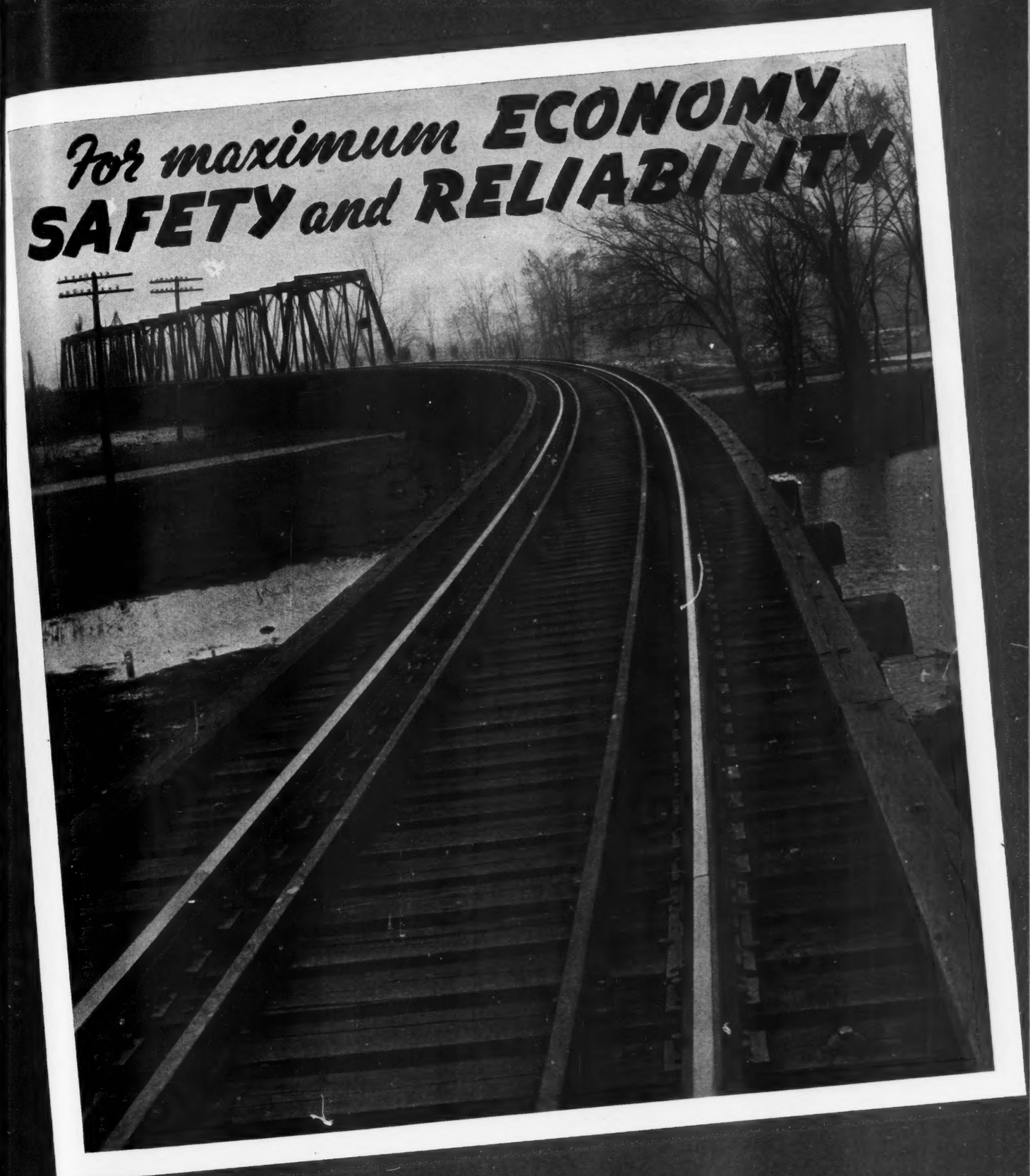
This railworthy wheel *starts* life with the lowest possible internal stress. It strongly resists stresses built up in service. It has 3 to 4 times more resistance to thermal cracking than any other wheel. Shelling is reduced to a minimum. The result is a safe wheel that is economical and resists failure even under severe conditions. In the laboratory, as well as in actual service, the new ARMCO wheel has demonstrated its ability to withstand conditions much more severe than any other wheel ever withstood.

The intensive research that produced these great benefits also contributed to improving regular ARMCO Heat Treated Wheels. These too have extremely low internal stresses and are exceptionally tough. And thanks to a special operation all ARMCO Wheels have easily machinable hubs to permit a true, taperless bore.

For utmost safety and higher mileage specify ARMCO Stress-Resistant Wheels for all high-speed service. Write for complete data. ARMCO RAILROAD SALES CO. INC., 2241 Curtis St., Middletown, Ohio.

ARMCO ARMCO **WROUGHT STEEL WHEELS**

AMCRECO *Creosoted* PRODUCTS



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COLONIAL CREOSOTIN COMPANY INCORPORATED

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PRODUCTS

for Greater

Freight and Passenger Train Efficiency

BARCO PRODUCTS are consistently selected for modern locomotives and trains because they fully meet *today's* severest requirements.

Higher boiler pressures—greater speeds—and the ceaseless demand for still better operating results —have set up new standards that must be met by locomotive specialties.

The ability of BARCO PRODUCTS to provide the necessary EXTRA VALUES in reliability, economy and safety, has resulted in their application on the nation's most outstanding locomotives.

BARCO TYPE X JOINTS incorporate entirely new features resulting in longer life with freedom from leakage of fluids or air. Only 3 wearing points, using hardened alloy steel forgings.

BARCO LOW WATER ALARMS are sure of action—actuated solely by height of water—operation depends on no other element.

BARCO TYPE M-13 POWER REVERSE GEARS, through an entirely new design of valve, give a fine adjustment at any speed and maintain the selected point of cut off. Even a broken air supply pipe will not change the position.

BARCO MANUFACTURING CO.
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THE HOLDEN COMPANY, Ltd.
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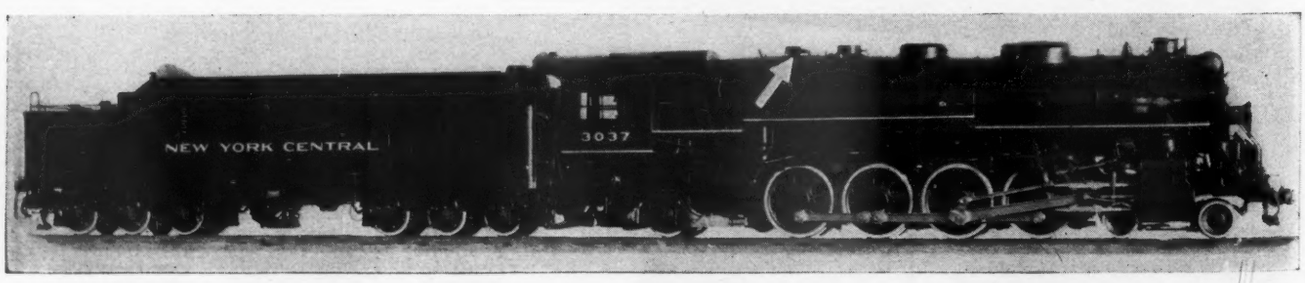
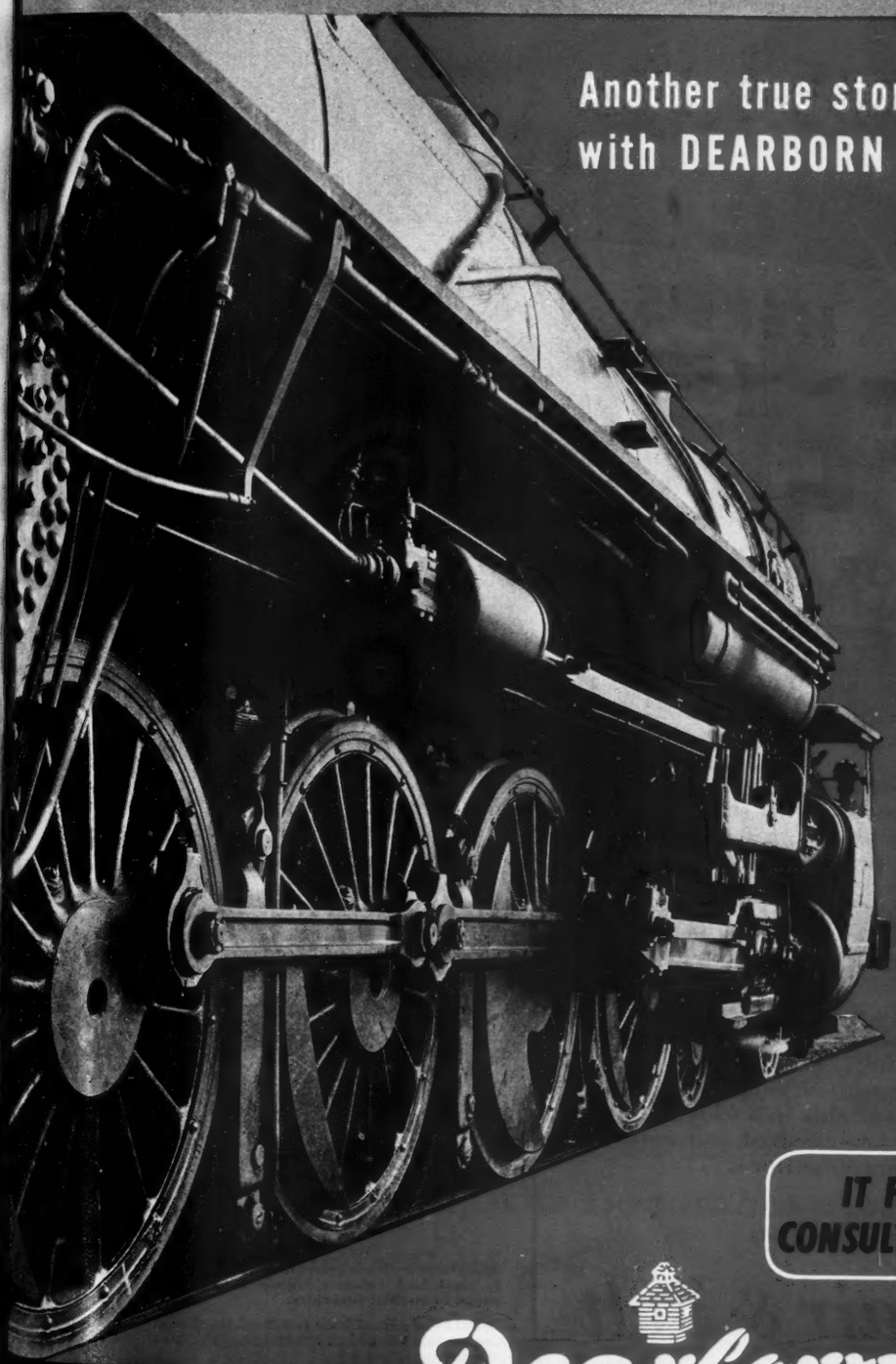


FLUE EXTENSIONS GRANTED

on 75% of all Locomotives in Service



Another true story of how a railroad saved with DEARBORN WATER TREATMENT

Several years ago, a well-known southern road encountered considerable trouble with both corrosion and scale. Flue extensions were never granted—in fact, flues burned out within a period of one or two years. Side sheets had to be renewed every 12 or 14 months, and fire cracking was unusually severe.

Dearborn engineers were then called in. After a thorough study of the problem, a special Dearborn Treatment was prepared. This treatment was accurately proportioned and fed through wayside plants.

Today, three-quarters of the engines on this road are being granted flue extensions for from one to two years. Sheets and flues remain clean indefinitely. Extensions are always obtained unless heavy repairs are necessary before the extension period expires.

In this and hundreds of other actual cases, Dearborn is saving railroads thousands of dollars. If you have a boiler water problem, consult your Dearborn representative.

DEARBORN CHEMICAL COMPANY

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CHICAGO

205 E. 42nd St.
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SCIENTIFIC WATER TREATMENT

Greater beauty, more comfortable temperatures, more restful quiet—*all three* are provided by FELTWOOD! This entirely different wall covering *decorates car interiors* with its rich-grained hardwood surface . . . it *insulates against outside weather*. . . it *deadens sounds and vibrations* with its backing of real hair felt. Your passengers will enjoy rail travel more when you use FELTWOOD to give them these three essential features of passenger comfort.

FELTWOOD *alone* combines in a single material the distinctive beauty of actual hardwood with the acoustic and insulating properties of hair felt. It is flexible—can be curved to form a smoothly rounded surface. It is light in weight—easy to install. Available in a wide range of beautiful hardwoods—entirely pre-finished and ready to apply. Write for samples and specifications.

Feltwood Comes in Sheets in A Large Variety of Beautiful Hardwoods

BEAUTIFIES—Wide selection of attractively matched cabinet woods for richer, more beautiful interiors.

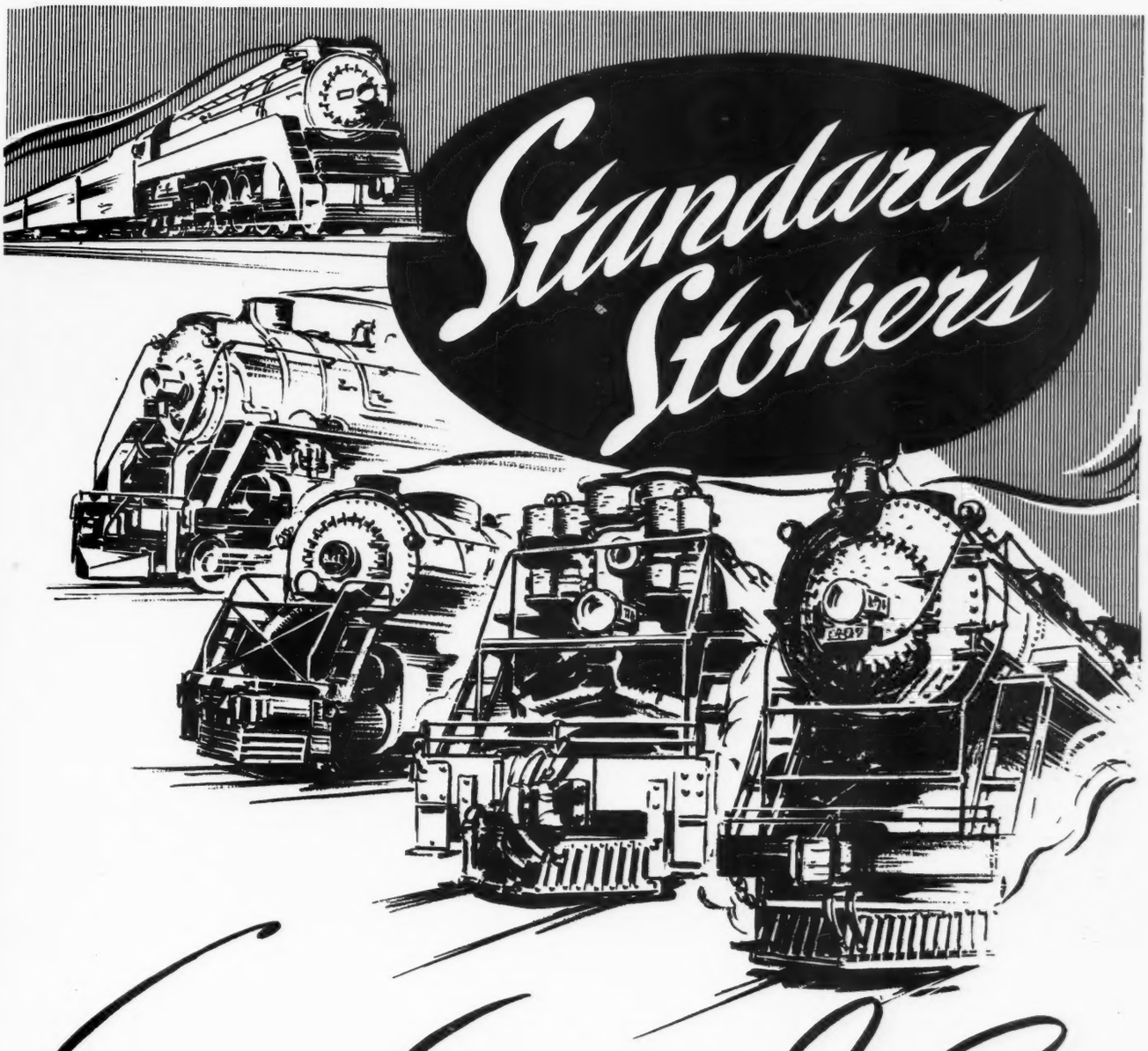
INSULATES—Real hair felt backing keeps out heat and cold . . . reduces sound and vibration.

EASY TO APPLY — Flexibility and light weight make application easy on any surface.

RESISTS FIRE—Hair felt backing will not support combustion.

American Hair & Felt Company

MERCHANDISE MART ***CHICAGO, ILLINOIS***



Standard Equipment on New Power

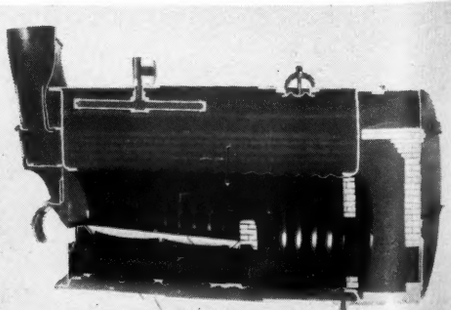
THE Reason? Over a Quarter Century of Stoker Engineering "Know How"... backed up by the successful performance of over 14,000 Locomotives . . . Standard Stoker-equipped.

THE STANDARD STOKER COMPANY, INC.
NEW YORK · CHICAGO · ERIE ·

EVEN THE DUMBEST OF PLUMBERS OUGHT TO BE ABLE TO THINK UP A BETTER EXCUSE THAN THAT ONE—BUT WAS HE SO DUMB, AFTER ALL?

LISTEN TO HIS STORY: "I wasn't always a plumber—I used to build freight cars once. So I know that freight cars are what it took to make that bathroom—pretty nearly every kind of car that A.C.F. builds. Take that tub—cast iron it is. So what? So there's A.C.F. *ore cars* in the iron mines. An' A.C.F. *hopper cars* to

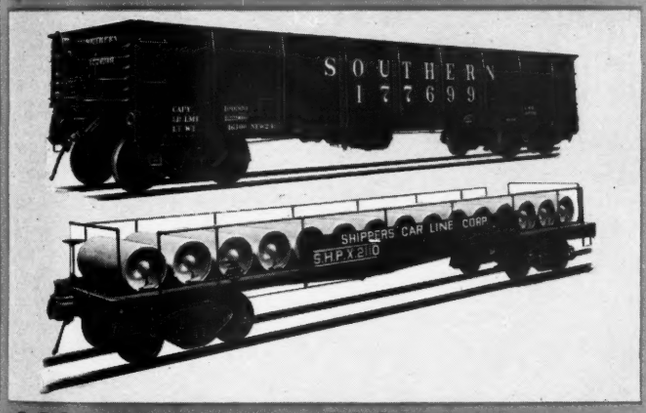
A.C.F. ORE CAR



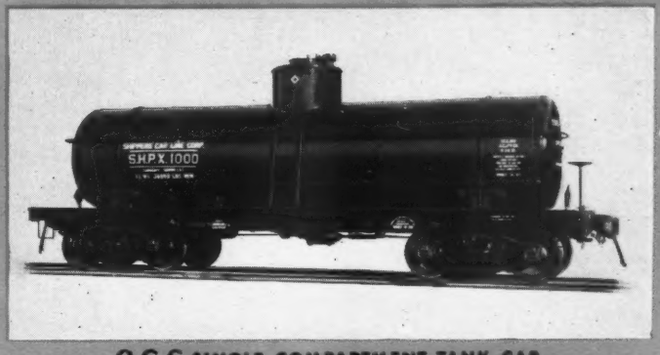
A.C.F. MORISON FURNACE

run to the smelters—or, if the ore came by boat, how about a.c.f. built *Morison Furnaces* to keep steam in their Scotch boilers? An' then a.c.f. *gondolas* carrying pigs and scrap to the foundry where this tub was cast. ★ That's only the beginnin'. Believe it or not, the nice shiny outside of that tub started out as just a lot of sand. Likely as not it—and the china clay for the faucet handles—sailed into the plant in a.c.f. *covered hopper cars,* for you've got to keep both these ladings absolutely clean. An' what could be nicer for that shower curtain to travel in than one of the new alloy steel welded-riveted a.c.f. *box cars*—or an a.c.f. *tank car* for the cocoanut oil for the soap? An' say, how about a.c.f. *multi-unit tank cars* to carry chlorine to purify the city water? So now was I so dopey when I said, 'I *was* lookin' for a freight car'?"

Despite its large volume of defense work, the American Car and Foundry Company is now prepared to meet the needs of the railroads for rolling stock of every kind—save locomotives—with efficiency and dispatch if orders are placed in time to arrange for the delivery of the necessary quantities of steel. A number of examples of our current production of freight cars and industrial cars are shown herewith. Your inquiries are invited.



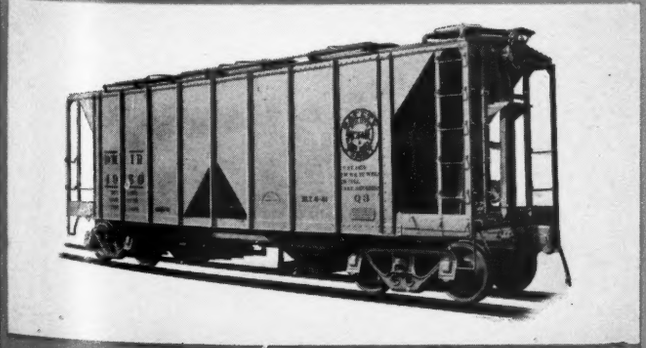
a.c.f. GONDOLA CAR (TOP) a.c.f. MULTI-UNIT TANK CAR



a.c.f. SINGLE COMPARTMENT TANK CAR

a.c.f. HOPPER CAR

a.c.f. ALLOY STEEL WELDED-RIVETED BOX CAR



a.c.f. COVERED HOPPER CAR

a.c.f.

AMERICAN CAR AND FOUNDRY COMPANY

NEW YORK · CHICAGO · ST. LOUIS
CLEVELAND · PHILADELPHIA · PITTSBURGH
ST. PAUL · SAN FRANCISCO

PIONEERS in... *Travel Comfort*

AN OUTSTANDING DEVELOPMENT

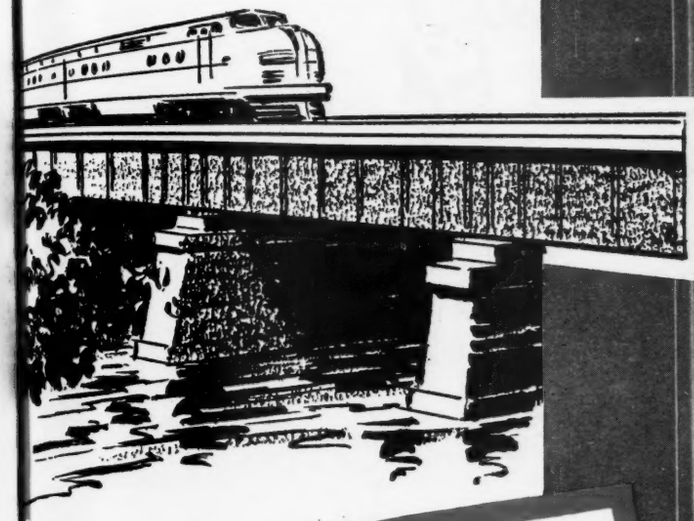
For 37 years Vapor engineers and technicians have pioneered in the task of increasing passenger comfort standards while reducing the cost of passenger train heating. Our every facility has been directed toward this goal.

Constantly improved design and the use of special alloys have enabled us to bring about efficiencies and economies that years ago would have appeared impossible; reduction in weight of almost a ton per car; uniform heat distribution to the coldest points first, then to the warmer sections; elimination of adjustments in service and at terminals; positive reduction of maintenance and steam consumption.

Not the least important Vapor contribution to passenger comfort and operating economies has been the coordination of all comfort and economy factors, so that longer trains are now possible *with assured comfort for the last passenger in the last car.*

VAPOR CAR HEATING CO.
RAILWAY EXCHANGE BLDG. CHICAGO, ILLINOIS

Built like a Bridge



SUPERIOR CAR DOORS

have the strength of girder construction

- TIGHT SEALING
- FREE ROLLING
- LIGHT WEIGHT
- CORROSION-RESISTANT

SUPERIOR CAR DOOR CO., *McCormick Building,* CHICAGO

THE public never heard much about the designers of the old-time train interiors. In those days, decorative furnishings had, first of all, to withstand grueling wear and gritty dirt—which didn't allow the designers much latitude.

With the advent of air-conditioning, however, new worlds of decorative possibilities were opened to the designers. They were able to unleash their imaginative powers and transform car interiors into veritable "living rooms on wheels."

As creators of fine upholstery fabrics, Collins & Aikman Corporation have worked hand in hand with the designers and the railroads in the development of a host of new designs, colors and textures for the interiors of many of the country's smartest trains.

"One hundred years young," they stand ready to set their resources and ingenuity to work for any railroad interested in the decoration of its car interiors—both new and modernized.

COLLINS & AIKMAN CORPORATION

200 Madison Avenue • New York City

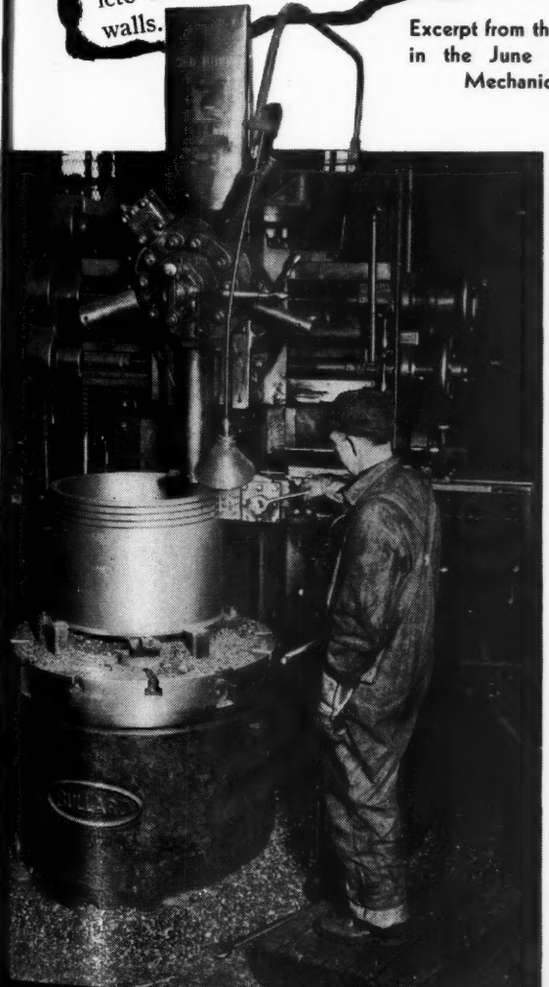
. . . On the Subject of Priorities

Shall We Hire Men or Machines?

* * * * * * * * * * "The truth of the matter is that the time has arrived when railroad shop management is going to have a chance to find out whether or not the "penny-wise and pound-foolish" policy with respect to machine tools and shop equipment is going to be a blessing or a curse. Today our shops are actually faced with the thing we have hoped for and talked about since the days when we were at the bottom of the depression—the prospect of a demand for motive power comparable with pre-depression days. This demand when translated into shop output is about to put a tremendous load on a plant and facilities on which the railroads have spent an average of less than five million dollars a year for modernization during the past five years—five million dollars a year on plant facilities in which the investment is about 350 million dollars. These are the plants which a recent survey has shown to be surpassed only by one other industrial group in the amount of obsolete machine tools and shop equipment within their walls.

Excerpt from the leading editorial in the June issue of Railway Mechanical Engineer.

We Are Doing Everything We Can To Keep In Step



. . . . Railroads Should Apply for Their Share of Increased Bullard Production

NATURALLY, the Bullard Company is in step with every beat of the defense march. The plant has been expanded and extra shifts are keeping a New Haven Switcher busy taking away cars loaded with Bullard Units.

Priorities are, of course, recognized. Industries manufacturing armaments must be served first.

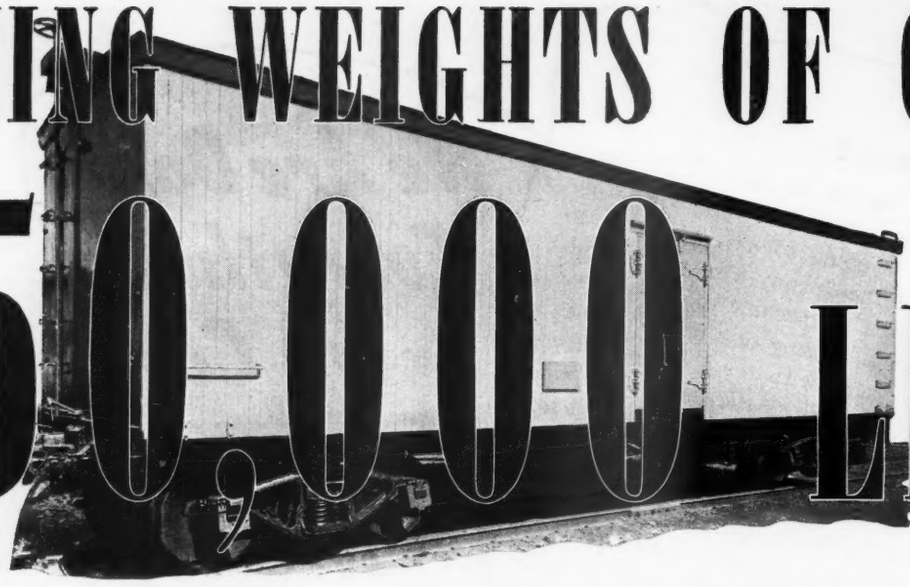
Railroads are a vital factor in the program of national defense, and we believe should be entitled to a position on the priority list.

To avoid the risk of serious delays in repairs to equipment railroads should present their case as strongly as possible. Bullard engineers are working day and night to meet the constantly increasing demands — they are anxious to meet every railroad order on time.

THE BULLARD COMPANY

BRIDGEPORT, CONNECTICUT

MOVING WEIGHTS OF OVER 150,000 LBS.



WESTINGHOUSE FRICTION DRAFT GEAR
TYPE NY-11-E
(Certified A. A. R.)

A stationary wear plate of slow-wearing alloy metal...not the housing ...takes the wear of the movable friction plates.

. . . DRAFT GEARS CUSHION THE TREMENDOUS IMPACT!

That's why it's important to have all cars equipped with modern draft gears... and to maintain them at full capacity. Lighter cars need modern draft gear protection even more than the stronger, more modern cars built in recent years.

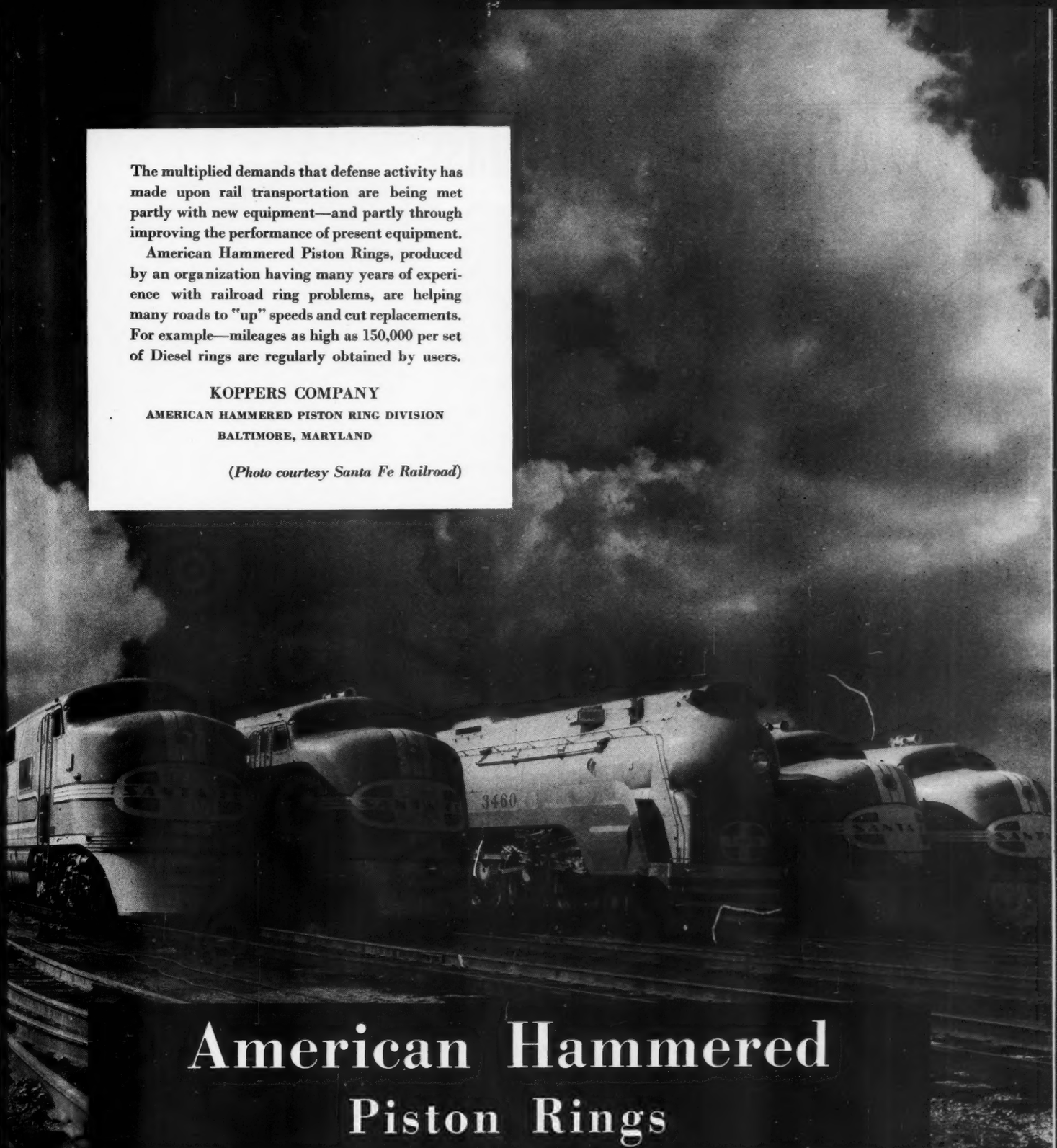
CARDWELL WESTINGHOUSE CO., CHICAGO
CANADIAN CARDWELL CO., LTD., MONTREAL

The multiplied demands that defense activity has made upon rail transportation are being met partly with new equipment—and partly through improving the performance of present equipment.

American Hammered Piston Rings, produced by an organization having many years of experience with railroad ring problems, are helping many roads to "up" speeds and cut replacements. For example—mileages as high as 150,000 per set of Diesel rings are regularly obtained by users.

KOPPERS COMPANY
AMERICAN HAMMERED PISTON RING DIVISION
BALTIMORE, MARYLAND

(Photo courtesy Santa Fe Railroad)



American Hammered Piston Rings

a KOPPERS product

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KOPPERS COMPANY, 7115 Koppers Bldg., Pittsburgh (22), Pa.
Please send me the literature checked:

- ☐ "Locomotive Cylinder Packing"
- ☐ "Locomotive Valve Packing"
- ☐ "Rings for Diesel Engines"
- ☐ "Rings for Miscellaneous Applications"
- ☐ "How to Order Piston Rings"
- ☐ "All-Iron Gate Valves"
- ☐ "Fast's Couplings"
- ☐ "Koppers Coal"
- ☐ "Roofing Specifications"
- ☐ "How to Build Steep Roofs with Coal Tar Pitch"
- ☐ "Dampproofing"
- ☐ "Creosote"
- ☐ "Typical Highway Bridges of Pressure-treated Wood"
- ☐ "Pressure-treated Timber in Railroad Cars"
- ☐ "Laminex Pre-fabricated Pressure-Creosoted Culverts"
- ☐ "Pressure-treated Timber"

Name..... Title.....

Company.....

Address.....

for ATTRACTIVE INTERIORS

• *Above and to left:* the Heywood Seat used in 12 new streamliner day coaches on the Southern Pacific. The cars, built by Pullman of Chicago, have sleek, modern interiors enhanced by this beautiful Heywood design.

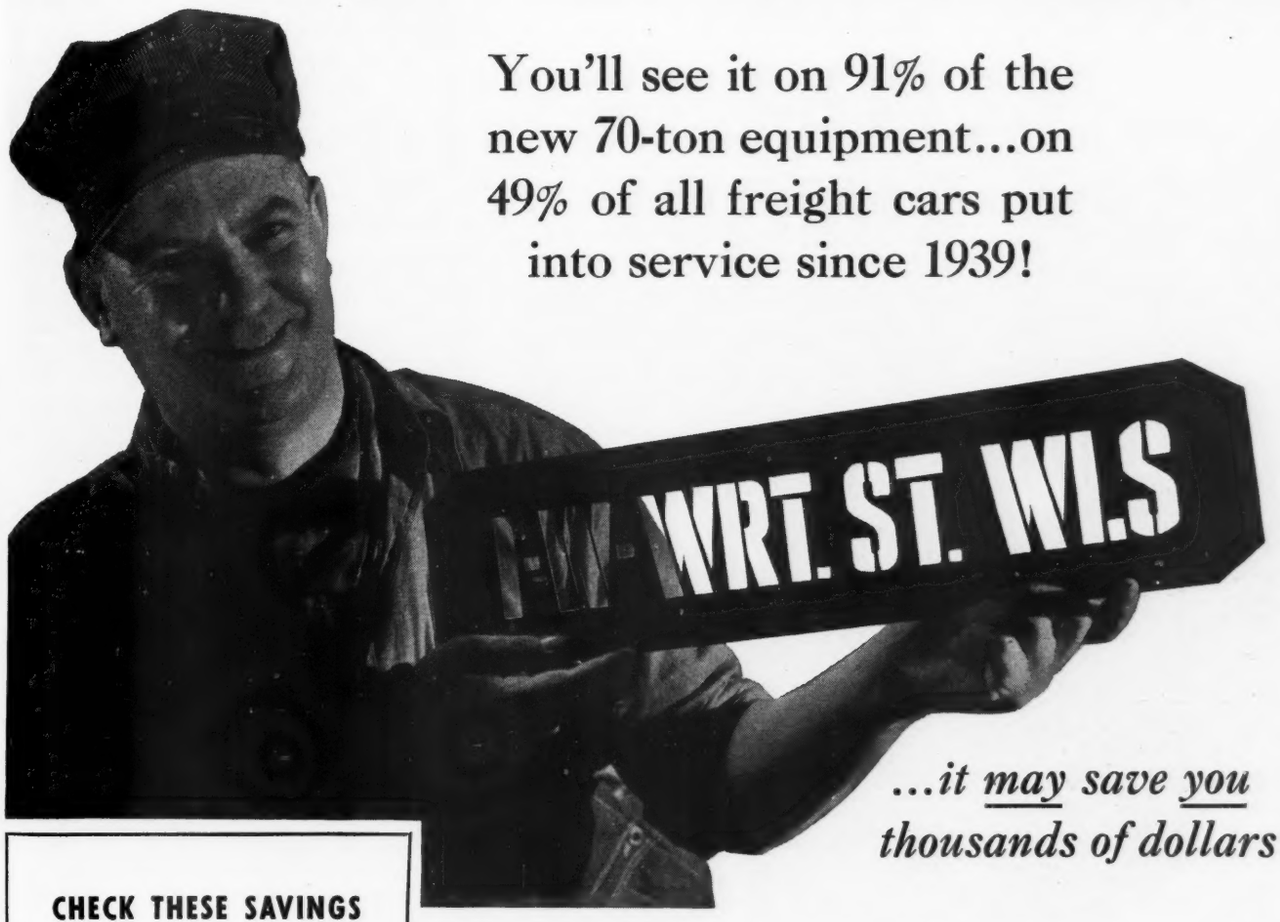
and for LUXURIOUS COMFORT!

THERE'S a reason why Heywood Seats are used in so many modernization programs as well as in new, streamlined coaches. These sleek, stylish seats completely change the interior effect. They'll transform dull, drab, dingy interiors into colorful, interesting coaches. And, as for comfort . . . Heywood Seats are the absolute "tops." They're built by engineers who know seating . . . men who appreciate how important comfort is to the riders and to the operators of any railroad. May we furnish details on regular or made-to-order Heywood Coach Seats? No cost or obligation, of course.

Sales Offices at
GARDNER, MASS.
CHICAGO
NEW YORK
PHILADELPHIA

HEYWOOD-WAKEFIELD
Established 1826
Transportation Seating Division

THE *"Trade-Mark"* OF PROGRESS



You'll see it on 91% of the new 70-ton equipment...on 49% of all freight cars put into service since 1939!

...it may save you thousands of dollars!

CHECK THESE SAVINGS

1. LONG MILEAGE. Mileages up to 400,000 miles have been recorded for U·S·S One-Wear Steel Wheels. Conservatively, this wheel generally averages at least 200,000 miles under 50/55 ton equipment.

2. LOW COST. Years of actual service with these wheels prove they cost less, per thousand miles, than any other type of freight car wheel.

3. SAVE WEIGHT. These wheels save 1500 pounds per car on 50-ton equipment, and 1900 pounds per car on 70-ton equipment—reducing weight 25% and 28% respectively. These savings add extra lading capacity and reduce roadway depreciation.

4. GREATER SAFETY. A.A.R. records prove that derailments and delays due to wheels decline sharply wherever steel wheels are used.

WITH increasing freight train speeds making safety more important than ever, with operating costs under continually closer scrutiny, we ask you to consider the tangible, proven benefits that U·S·S One-Wear WROUGHT STEEL WHEELS offer. Here is safe, long mileage at lowest cost in railroad history.

The outstanding serviceability of Wrought Steel Wheels has been proven many, many times — under all operating conditions, in all types of service. More than a million of these long-mileage wheels are carrying freight on 88 railroad systems and 66 private car lines. Some of these wheels have run up astounding mileages—400,000 miles and better. Averages of 300,000 and 200,000 are common.

The safety of Wrought Steel Wheels both to load and rolling stock is also a matter of record. It will pay you to investigate. One of our wheel engineers will gladly call and give you the complete facts and figures.

U·S·S *One-Wear* WROUGHT STEEL WHEELS

CARNEGIE-ILLINOIS STEEL CORPORATION

Pittsburgh *and Chicago*

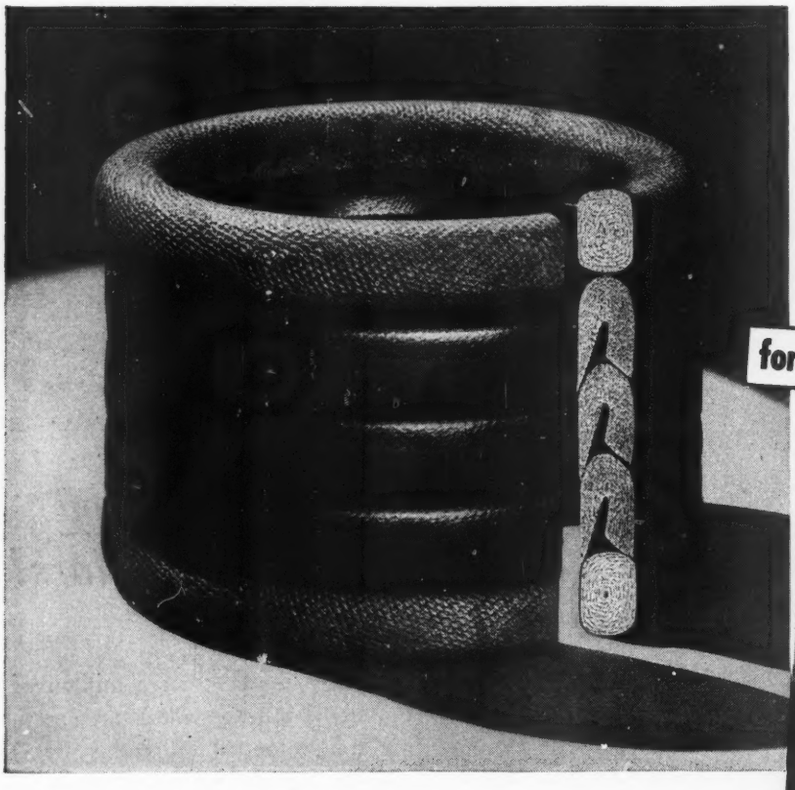
Columbia Steel Company, San Francisco, *Pacific Coast Distributors*

United States Steel Export Company, New York

UNITED STATES STEEL

If you want to cut re-packing costs

— BETTER TRY SEA RINGS!



for POWER-REVERSE GEARS

for BOOSTER BALL JOINTS

for PLUNGERS

for RECIPROCATING RODS

It's not packing . . . it's re-packing that's really expensive

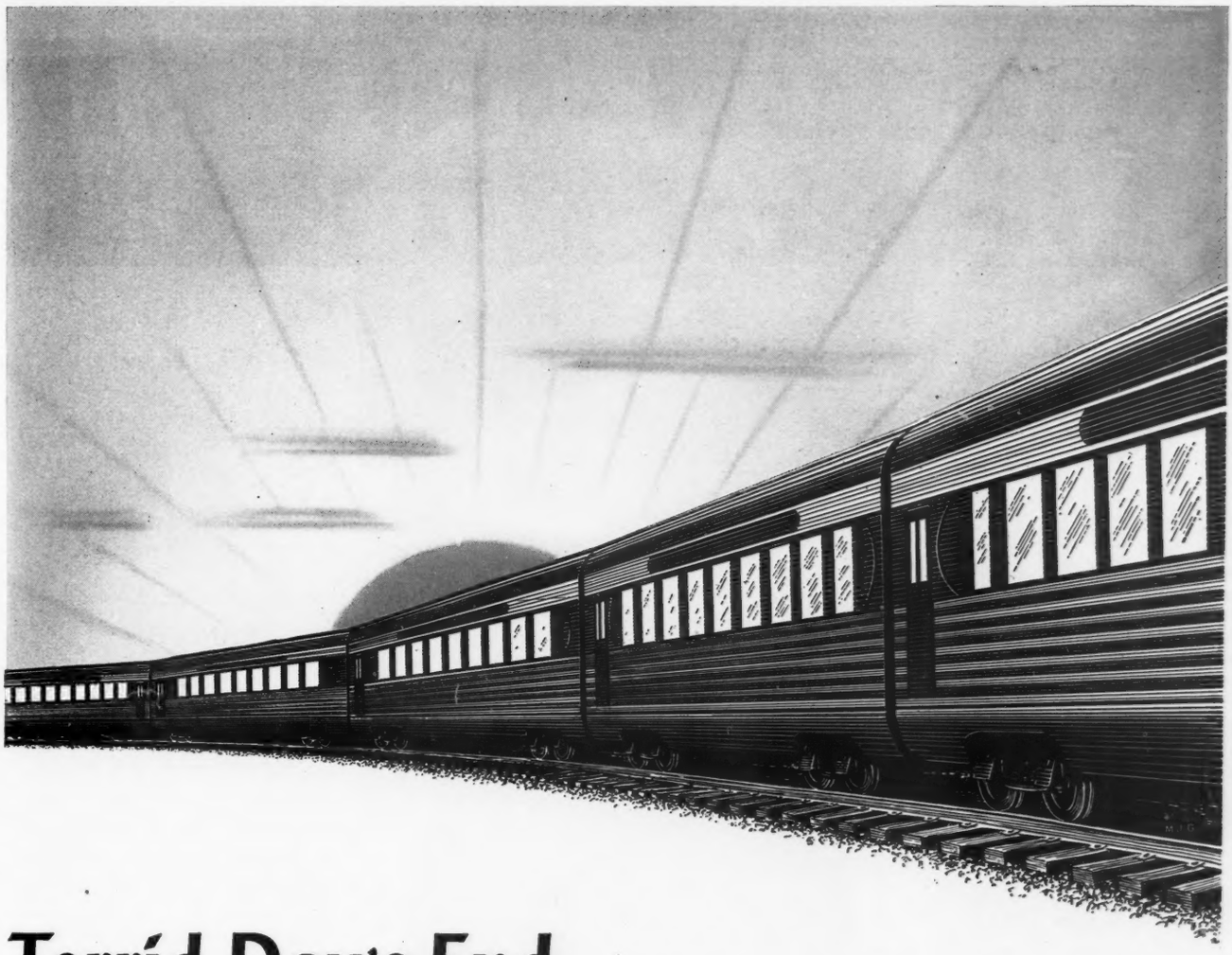
. . . that's why railroads are using Sea Rings for all types of reciprocating service—from high-pressure steam-pipe expansion joints and power-reverse gears on locomotives to elevator plungers and power-plant pumps.

Sea Rings are custom-made to fit specific operating conditions on steam, air, oil and water service. Entirely automatic, they seal under pressure, release on the return, thus reducing friction and wear on both packing and rod.

For details on J-M Sea Rings and the complete line of J-M Packings and Gaskets, write Johns-Manville at New York, Cleveland, Chicago, St. Louis or San Francisco.

JM PRODUCTS

JOHNS-MANVILLE 83 YEARS OF SERVICE TO TRANSPORTATION

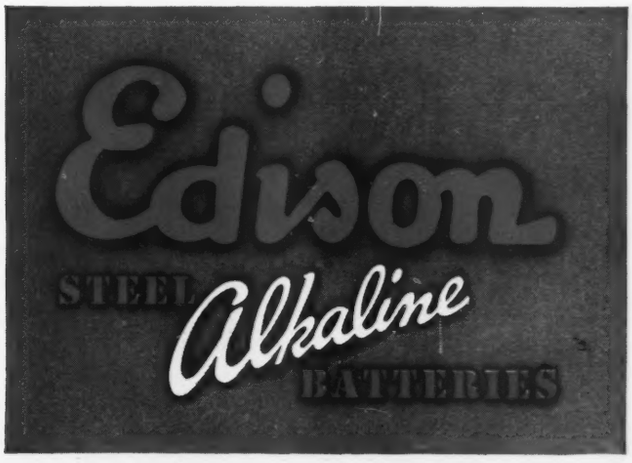


Torrid Day's End...

This sleek streamliner flows swiftly into the dark of night and the passengers she carries safely to their destination have ridden the day in air conditioned comfort. They can rest tonight fully as well as they would in their own homes—indeed, even more comfortably. Comparatively few homes are air conditioned.

Today's train gives them not only the comfort of air conditioning but really good lighting and a variety of facilities such as the ingenious devices in the kitchen and pantry, all of which are operated from the electric power supply of the car.

There, beneath each car rides a hard working storage battery. Protected power, dependable power is assured when those storage batteries are



WAUGH-GOULD DRAFT GEAR

TYPE 403

AWARDED A. R. A. CERTIFICATE No. 1

Combines the three all-important characteristics that provide LASTING PROTECTION to cars and lading—

HIGH CAPACITY-STURDINESS
SMOOTH ACTION

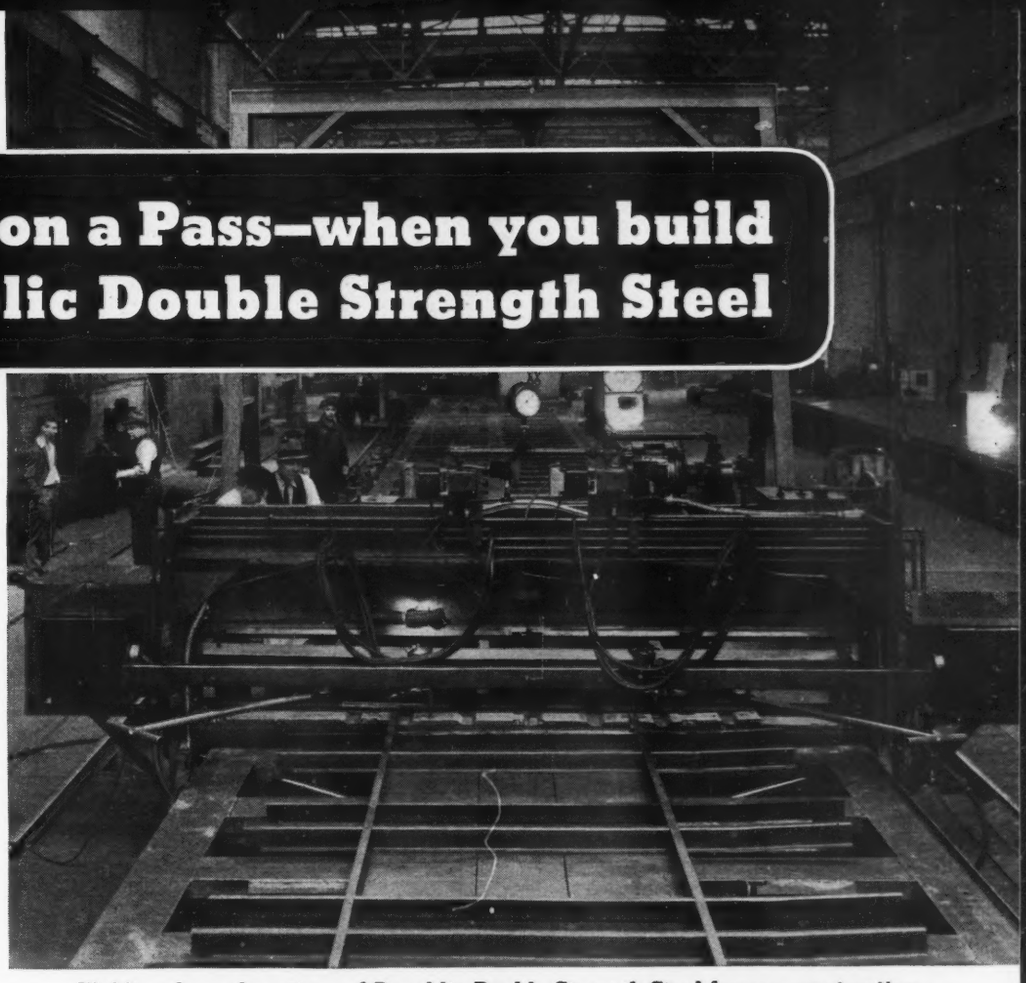
WAUGH EQUIPMENT COMPANY

420 LEXINGTON AVENUE, NEW YORK

CHICAGO **ST. LOUIS**

CANADIAN WAUGH EQUIPMENT COMPANY, LTD., MONTREAL

8 Cars Ride on a Pass—when you build with Republic Double Strength Steel



Welding formed sections of Republic Double Strength Steel for car construction

LET'S KEEP COOL!

If our American way of life is to survive, every industry must work in close cooperation with the industries that serve it and, in turn, with the industries it serves during this period of peak demand for goods.

A rush for materials is very much like a run on a bank—and can be equally dangerous unless cool heads analyze and plan.

We, in Republic, are doing just that—analyzing the orders we receive and planning our production, so that our greatly enlarged blast furnace, electric furnace and rolling mill facilities can be as helpful as possible to the greatest number of buyers in serving America's urgent need for ***steel—first line of national defense.***

R. J. Wysor
PRESIDENT

Here's a high-tensile, low-alloy, corrosion-resistant steel that cuts the weight of new cars to a point where you can haul eight extra cars without additional power for every fifty in the train. • Roads that have used Republic Double Strength Steel have ordered repeatedly because it cuts dead weight and functions perfectly over a wide range of applications—in all parts of underframes as well as in box cars for sides, side corner and door posts, floor stringers, cross ties, sills and sill reinforcements and roofs. And its high welding qualities help you speed construction.

Write for Technical Information

REPUBLIC STEEL CORPORATION

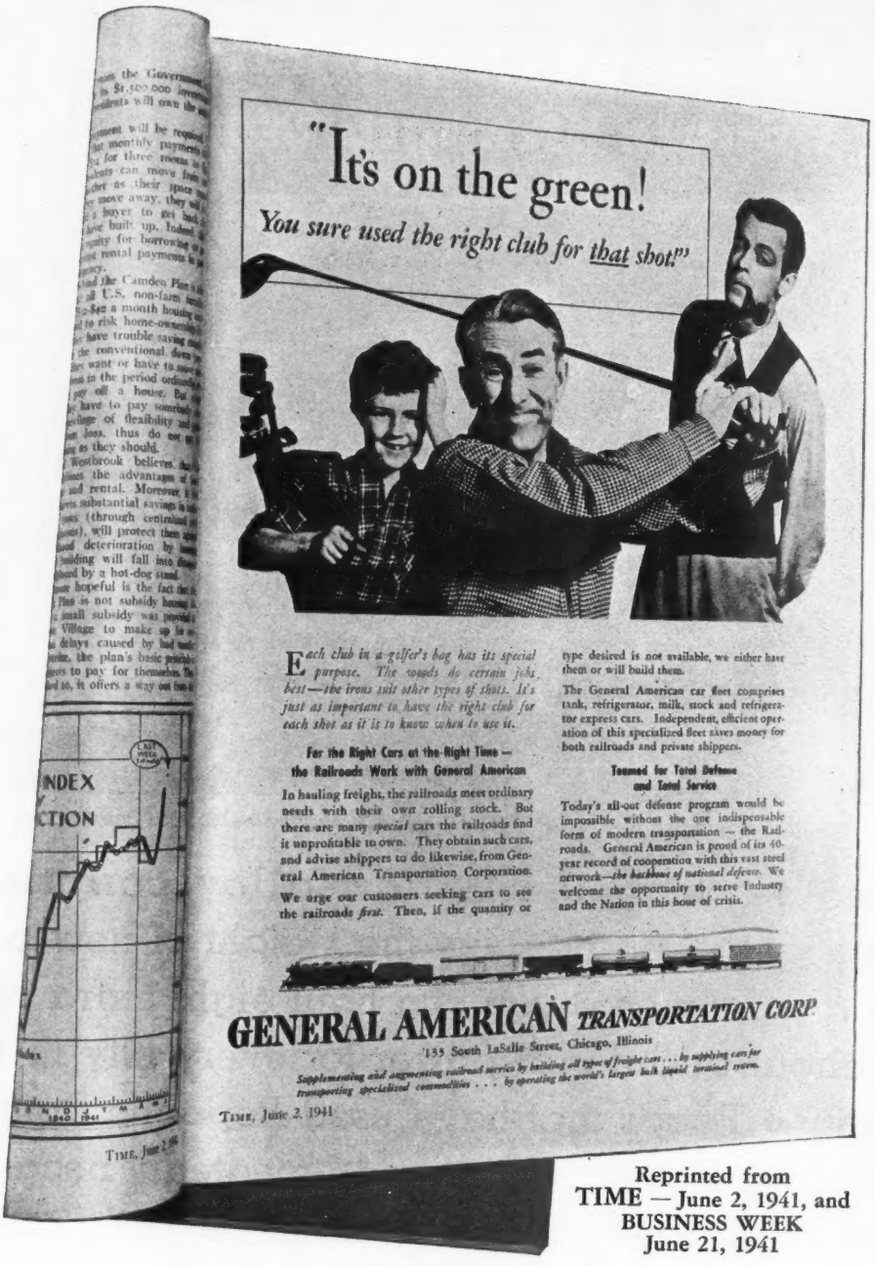
Alloy Steel Division: Massillon, Ohio • General Offices: Cleveland, Ohio

BERGER MANUFACTURING DIVISION • CULVERT DIVISION • NILES STEEL PRODUCTS DIVISION
STEEL AND TUBES DIVISION • UNION DRAWN STEEL DIVISION • TRUSCON STEEL COMPANY

REPUBLIC DOUBLE STRENGTH STEELS

SHEETS • STRIP • PLATES • BARS • BOLTS • NUTS • RIVETS

Weight-Saving • Stronger • More Corrosion-Resistant



Reprinted from
TIME — June 2, 1941, and
BUSINESS WEEK
June 21, 1941

"The railroads are doing a great job!"

Every day more and more people join in praising modern railroad efficiency and progress. But there is still need for a fuller understanding of the railroads' true importance in our national existence.

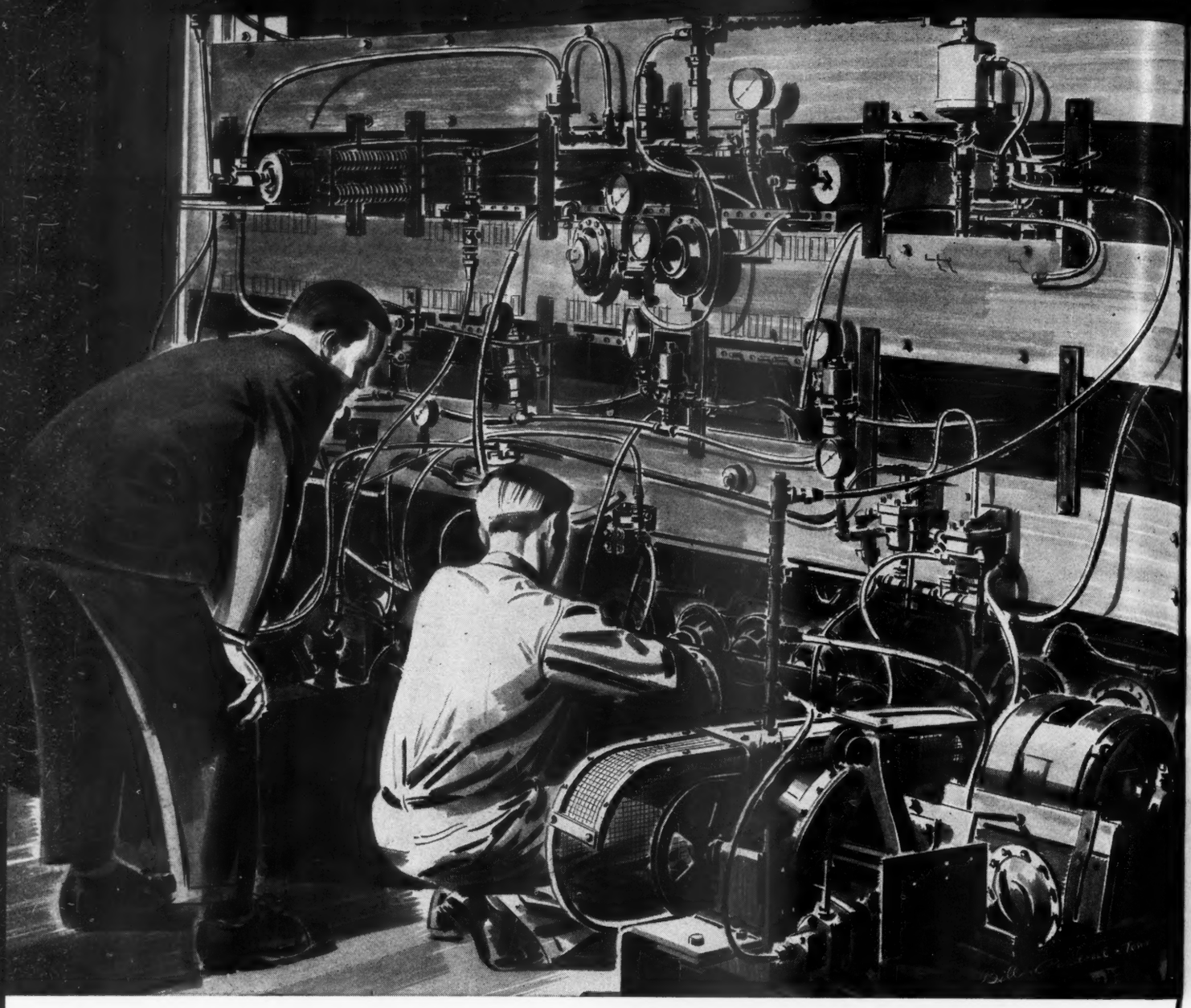
Each month in TIME and BUSINESS WEEK, General American Transportation Corporation describes the teamwork of the railroads and our organization in handling special commodities. In addition, each advertisement in this series adds its testimony as to the **indispensability** of railroad service.

We welcome this opportunity to contribute in some measure to the advancement of the industry which has been our friendly co-partner for 40 years.

GENERAL AMERICAN
TRANSPORTATION CORP.

135 South LaSalle St., Chicago, Ill.

Supplementing the Railroads in Their Vital Work Since 1901

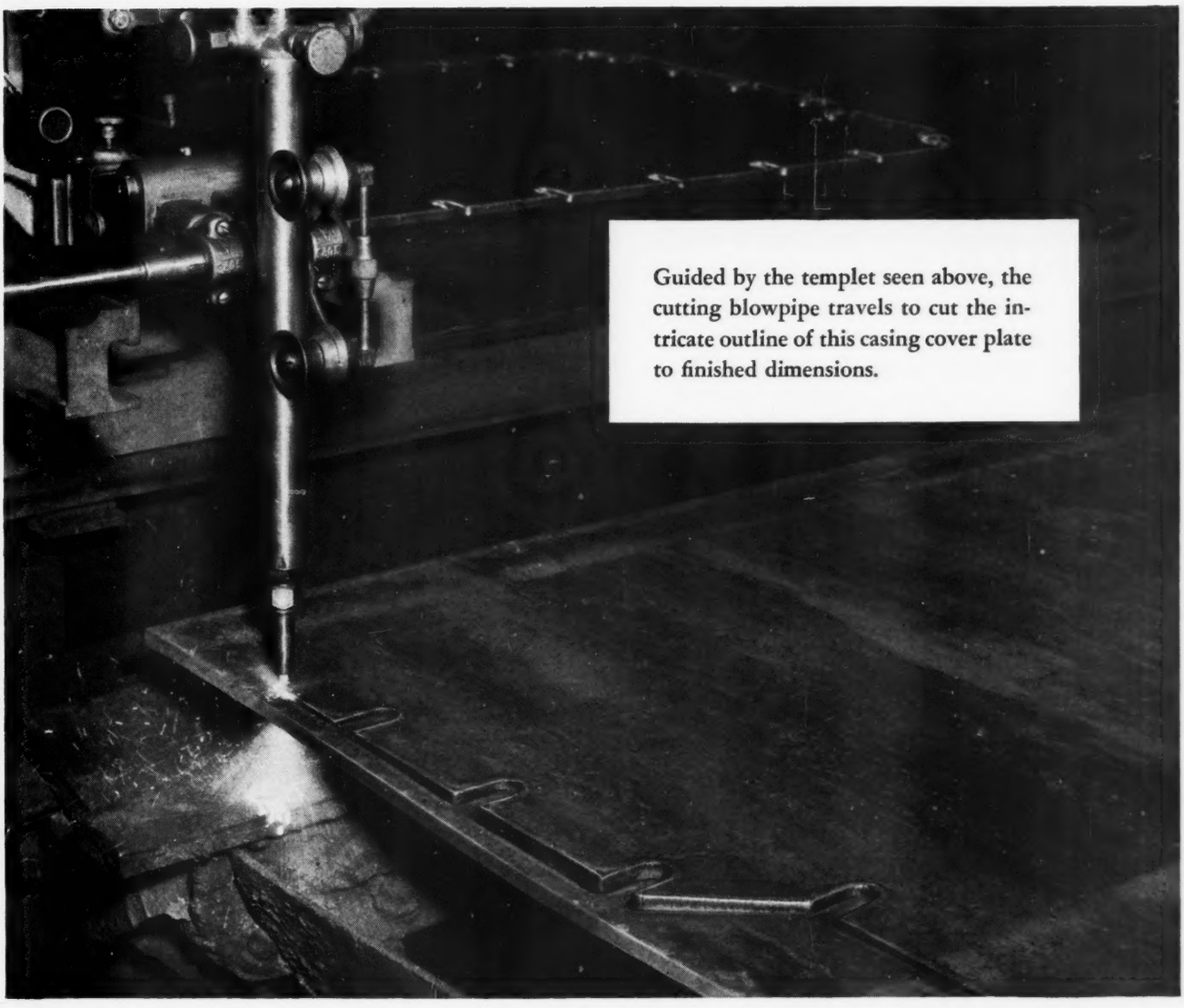


WE HAD A THOUSAND ACCIDENTS FOR YOU TODAY

Imagine, if you can, the grief of an entire industry bottled up in one soundproof room. A chamber of horrors, if you like, is this testing laboratory which, as a potent part of Bendix-Westinghouse research, keeps thousands upon thousands of accidents from ever reaching your reports ★ It's one of the countless services Bendix-Westinghouse maintains in the interest of safer, more economical operation of motor transportation in all its phases ★ Obviously, it would be difficult to explain in detail the many services such as this which combine for the general advancement of the motor transport industry ★ We are confident, however, that the success of the products, genuine Bendix-Westinghouse Air Brakes and Air Control Devices notably reflect the care and precision which goes into their manufacture more forcefully than mere words . . . And you may be certain that your continued faith in genuine Bendix-Westinghouse Air Brakes, plus our ever mounting faith in the rapidly growing field of motor transportation, will constantly intensify our endeavor to serve you best.

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE CO.
ELYRIA, OHIO

AN ORGANIZATION WHOSE UNDIVIDED EFFORT AND UNLIMITED RESOURCES ARE DEVOTED TO YOUR CONVENIENCE AND SAFETY



Guided by the templet seen above, the cutting blowpipe travels to cut the intricate outline of this casing cover plate to finished dimensions.

OXY-ACETYLENE SHAPE-CUTTING

Helps Hold Down Inventory Costs

• Oxy-acetylene machine flame-cutting makes possible the production of car and locomotive parts from stock steel as needed. This eliminates the necessity of carrying large inventory stocks and helps hold down costs of equipment repair and fabrication. Parts are so accurately cut to pattern that in most instances no machining is required. The permanent templets used are easily constructed and may be conveniently stored in a small space, readily available for the shape-cutting of duplicate parts at any time in the future. Oxweld instructors demonstrate how railroads can take advantage of the many economical features of shape-cutting and get uniformly good results from this oxy-acetylene application.

THE OXWELD RAILROAD SERVICE COMPANY

Unit of Union Carbide and Carbon Corporation

UCC

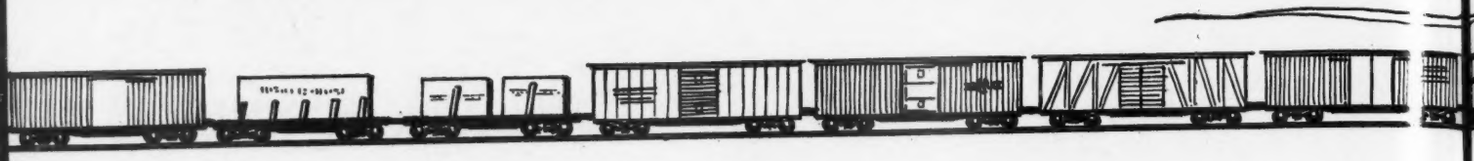
Carbide and Carbon Building Chicago and New York

OXWELD RAILROAD SERVICE

SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

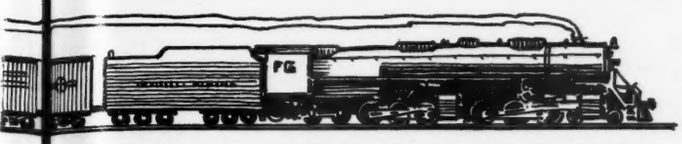
The word "Oxweld" is a registered trade-mark of a Unit of Union Carbide and Carbon Corporation.

To Get Your "Hotshots"



Put These Diesel-electric Switchers to Work They'll Give You Yard Work that CLICKS

on the Road *FAST*



IF YOUR road boasts a fleet of these Alco-G.E. switchers, you've already stored your switching problems in the comfortable corner of your mind that's reserved for problems you've licked. But if you've not yet put these diesel-electrics to work cutting costs in your yards, we'd like to take just a few minutes to give you in 1-2-3 order some of the big reasons why they *can* do your switching so much faster and cheaper.

WORKING SIDE-BY-SIDE TO SAVE YOU MONEY

American Locomotive and General Electric

1

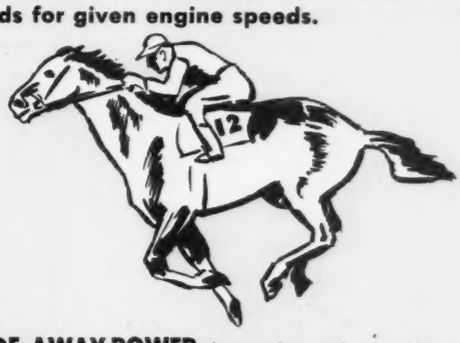
BIG WINDOWS AND A LOW HOOD give exceptional visibility. The operator can see better, therefore work faster and more safely.

2

COMFORTABLE CAB, CONVENIENT CONTROLS provide ideal working conditions, promote operator efficiency all day long.

3

PERFECT CO-ORDINATION between Alco's 4-cycle engine and G.E.'s electric drive results in remarkably rapid acceleration and high average and top speeds for given engine speeds.

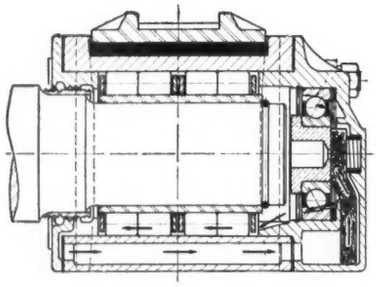


4

STRIDE-AWAY POWER throughout the entire speed range of the locomotive results from full weight on drivers and G.E.'s patented split-pole exciter.

A STANDARD Size to Meet Each Railroad Requirement

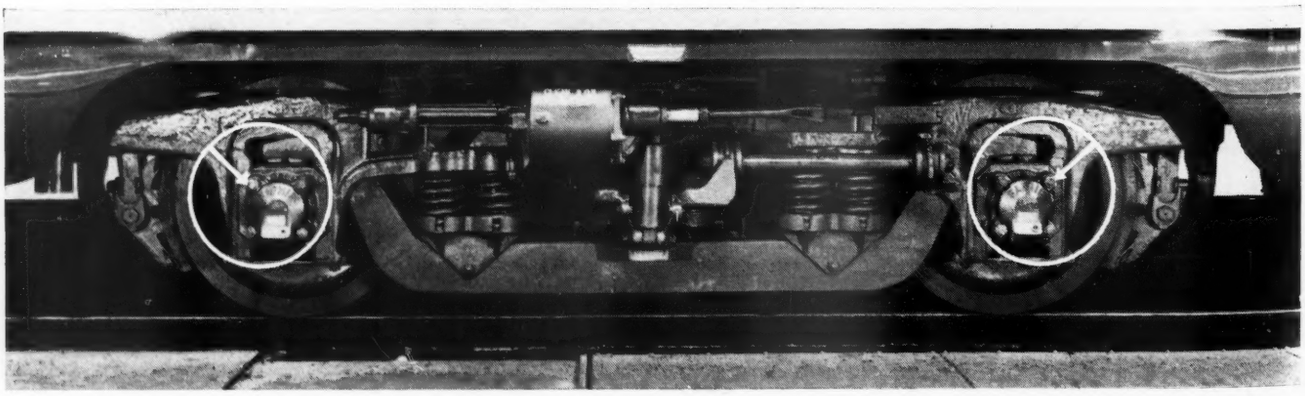
FAFNIRS AGAIN – *On Twenty-five New Cars for Northwestern "400" Trains!*



After three million miles of satisfactory service from their Fafnir journals, C & NW has now ordered 25 more "400" cars built by Pullman-Standard. To these new cars, Fafnir Ball & Roller Journal Boxes will bring their unbeatable combination of high capacity rolls, and balls to take end thrust . . . positive lubrication at all speeds . . . hardened cast steel housing, reversible for double wear . . . rubber insulation to deaden noise and vibration. Have you full facts on these economical journal units? The Fafnir Bearing Co., New Britain, Conn.

FAFNIR BALL & ROLLER JOURNAL BEARINGS

THE ONLY COMBINATION BALL AND ROLLER JOURNAL BOX



Accurately HEAT-TREATED

Uniformly

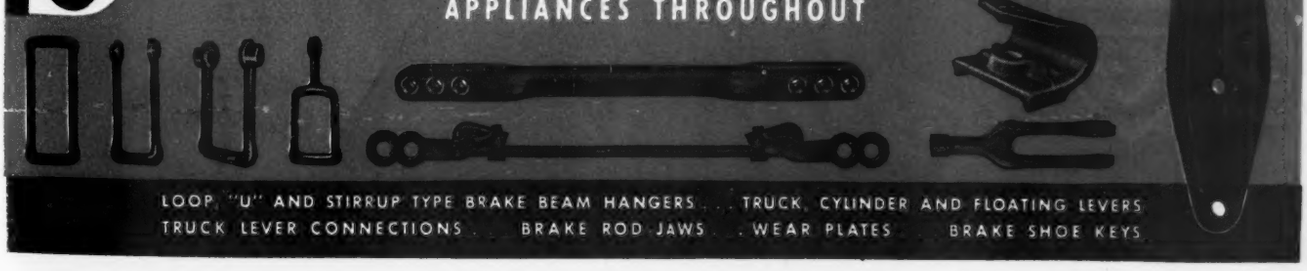
Resistant to Wear

To obtain and insure uniformly high hardness and uniform resistance to wear, Schaefer Brake Beam Hangers are heat-treated and oil-quenched by automatically-controlled equipment. Heating temperature is maintained within a few degrees by the most modern electrical control. Heating in a mechanically-operated rotary furnace determines to seconds the heating time of each hanger. Hence, the high uniformity of Brinell readings on test hangers — and the hanger after hanger uniformity of long life in service. Schaefer Equipment Company, Koppers Building, Pittsburgh, Pa.

FOR LOWEST FOUNDATION BRAKE GEAR MAINTENANCE, SPECIFY

SCHAEFER

APPLIANCES THROUGHOUT

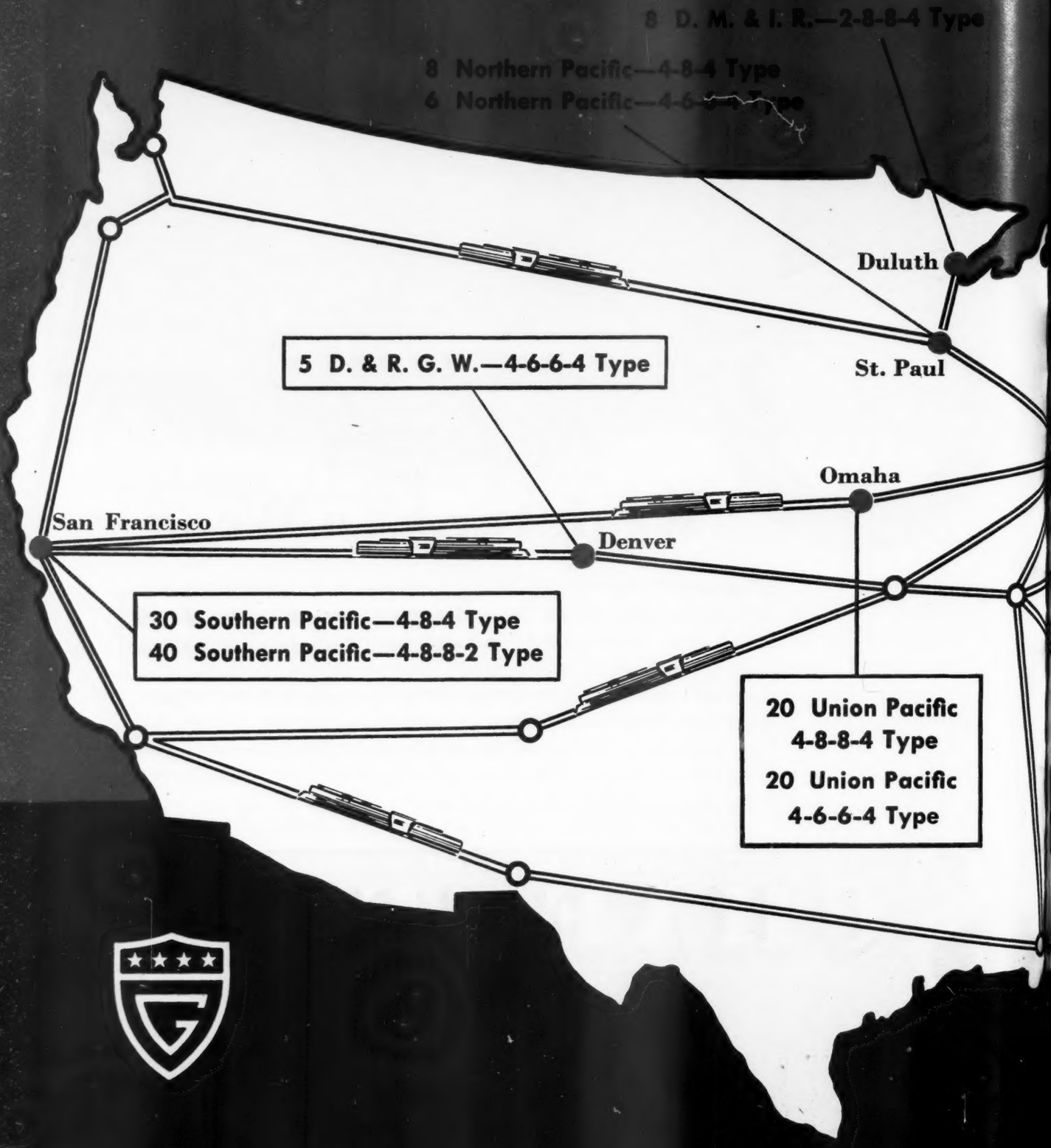


LOOP, "U" AND STIRRUP TYPE BRAKE BEAM HANGERS . . . TRUCK, CYLINDER AND FLOATING LEVERS
TRUCK LEVER CONNECTIONS . . . BRAKE ROD JAWS . . . WEAR PLATES . . . BRAKE SHOE KEYS

COMMONWEALTH PRODUCTS

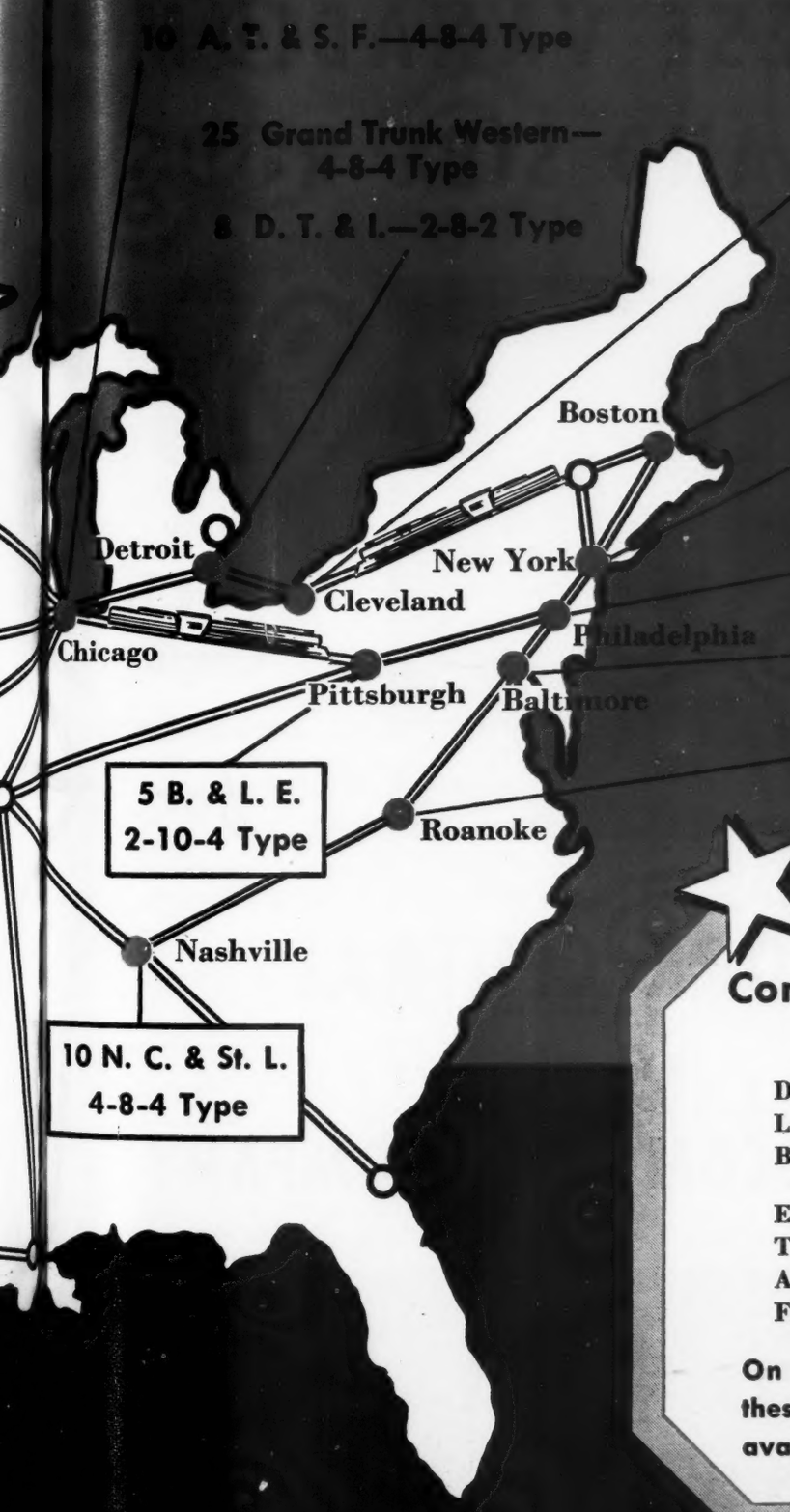
Ordered in 1940 and 1941 Will

Transporting Nation's



GENERAL STEEL CASTINGS

on MODERN LOCOMOTIVES
Play an Important Part in
Defense Materials!



15 N. Y. C. & St. L.—2-8-4 Type
10 Chesapeake & Ohio—2-6-6-6 Type
2 Chesapeake & Ohio—4-8-4 Type
8 Chesapeake & Ohio—4-6-4 Type
12 Pere Marquette—2-8-4 Type
7 Wheeling & Lake Erie—2-8-4 Type

5 Boston & Maine—4-8-2 Type

20 Delaware & Hudson—4-6-6-4 Type
65 New York Central—4-8-2 Type

2 Pennsylvania—4-4-4-4 Type

12 Western Maryland—4-6-6-4 Type

5 Norfolk & Western—4-8-4 Type
16 Norfolk & Western—2-8-8-2 Type

Commonwealth Cast Steel Locomotive Devices

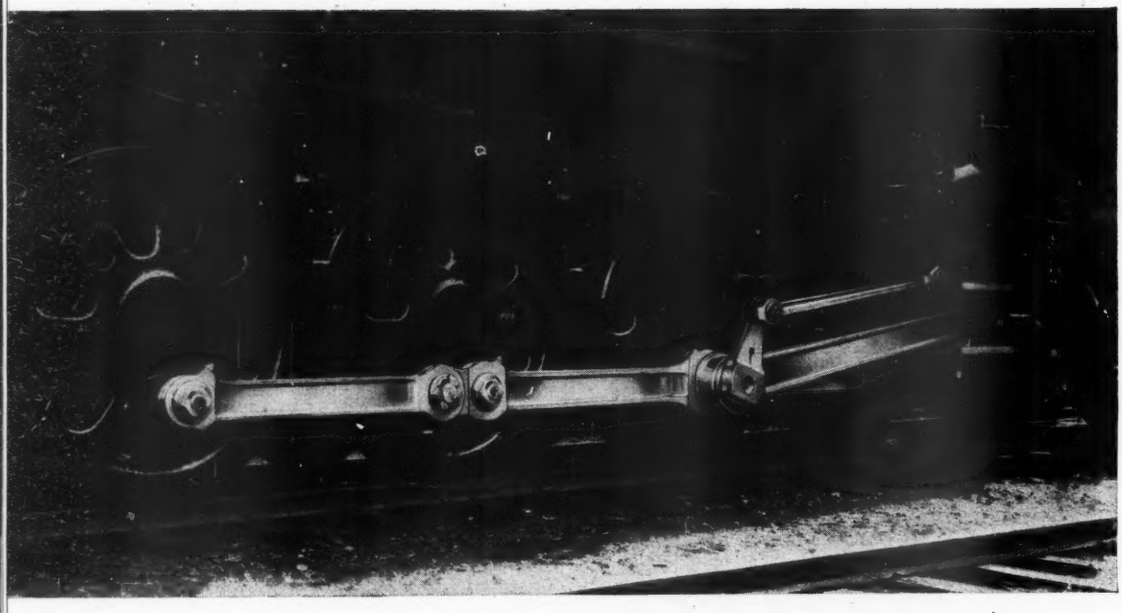
- Deflecting Pilots
- Locomotive Beds
- Boxpok Driving Wheels
- Engine Trucks
- Trailer Trucks
- Ash Pans
- Fire Pans
- Tender Beds
- Tender Guiding Trucks
- Waterbottom Tenderframes
- Tender Trucks

On railroads throughout America, these devices are increasing locomotive availability by reducing maintenance.

CORPORATION EDDYSTONE, PA. GRANITE CITY, ILL.

Again

MANGANESE VANADIUM *for* MAIN AND SIDE RODS



on

15

New Mohawk Type Freight Locomotives

for

NEW YORK CENTRAL

BY

AMERICAN LOCOMOTIVE COMPANY

VANADIUM

CORPORATION OF AMERICA • NEW YORK, N. Y.

On 50 new Mohawk type locomotives delivered last year, New York Central specified normalized and tempered manganese vanadium for main and side rods, as does the Pilliod Company for modernized Baker valve motion parts on all locomotives.

The average of many tests before acceptance showed:

MANGANESE VANADIUM STEEL

	Main Rods	Side Rods	Baker Valve Motion Parts	
			Radius Arms	Bell Cranks
Y. P. lbs. sq. in.	76,110	75,100	81,000	78,500
Tens. Strength	103,410	103,100	106,500	99,400
Elong., % in 2"	26.9	28.2	26.5	27.5
Red. Area, %	63.0	60.1	64.1	65.9

Parts for which normalized and tempered carbon vanadium steel is specified again showed:

CARBON VANADIUM STEEL

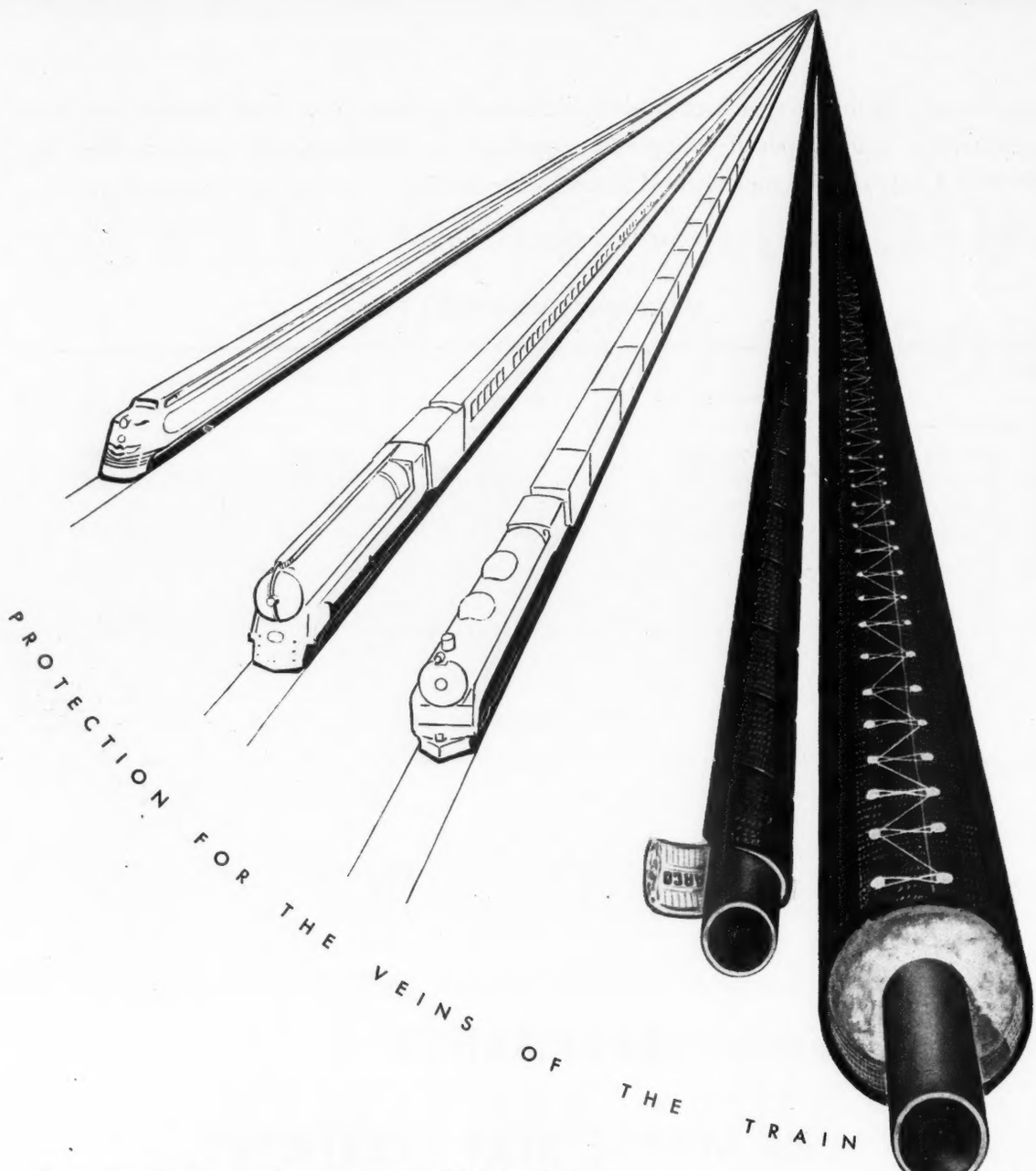
	Engine Truck Axles	Main Crank Pins	Transverse and Trailer Truck Equalizers
Y. P. lbs. sq. in.	63,870	62,320	63,440
Tens. Strength	100,990	99,830	102,000
Elong., % in 2"	26.9	24.9	25.5
Red. Area, %	51.8	47.8	51.7

For the best in **PERFORMANCE**

with **SIMPLE HEAT TREATMENT:**

MANGANESE VANADIUM

ROLLING ROLLING STOCK GATHERS NO LOSS!



Ease of application and re-application; high insulating efficiency and maximum operating economy in Unarco Steam Pipe Insulation aid in permitting maximum use of cars and locomotives — keep costs at a minimum. Unarco Insutape and Wovenstone will not shake down even under the most severe vibrations — always stay snug and firm against the pipe. This added insulating efficiency keeps rolling stock rolling — requires but a minimum amount of time in shops and roundhouses.

UNARCO

UNION ASBESTOS & RUBBER CO.

310 SOUTH MICHIGAN AVENUE · CHICAGO

OVER 1,000,000 FREIGHT CARS

have been equipped with ASF side frames and bolsters

A lot of side frames and bolsters? Yes . . . and they mean a lot of development work too. Over 40 years of it. For "The Foundries" has constantly improved designs to meet changing conditions.

Self-Aligning Trucks are designed for today's requirements . . . they *stay on the job* of moving heavy traffic. Maintenance costs are low . . . wheels are quickly removed . . . springs are most accessible . . . and . . . large bearing areas between bolsters and frames insure long wear.

They are under 80,000 freight cars.

SELF ALIGNING TRUCKS

Utilize standard springs • Fewest number of parts • Easiest to inspect • Easiest to shim • Lightest weight • Lowest cost.

AMERICAN STEEL FOUNDRIES

Keep your work-schedules

"ON TIME"

with

AMERICAN OPTICAL GOGGLES

It is a byword in railroading to be "on-time" . . . on schedule. And when work-schedules are *upset* by eye injuries—major *or* minor—a part or the entire system can be adversely affected . . . money, time, man-power wasted.

Insure the smooth, low-cost functioning of all your crews and departments by furnishing American Optical Goggles for every man in the mechanical, electrical, signal, train service and maintenance divisions. The American Line includes the proper goggle for every worker. And each American Goggle is light, cool, comfortable . . . equipped with Super Armorplate Lenses (prescription-ground if desired in spectacle type goggles) for extra-impact resistance.

Your AO Representative will gladly show you this famous line and explain the economies of a well-planned eye protection program.

American Optical Company

Factories at Southbridge, Massachusetts

GET EYE ACCIDENTS OUT OF YOUR SYSTEM—
WITH AMERICAN OPTICAL GOGGLES

9784

18,667 Pullman-built freight cars

—utilize these welded units in varying combinations

These welded units may be incorporated in steel under-frames for all types of cars and all types of draft attachments and centering devices.

U. S. Patent No. 2,122,159

Pullman-Standard welded bolster center fillers, draft lugs and strikers are permanently tight. Purdue University tests proved them to be stronger than conventional riveted designs.

Damage to car structures and trucks sometimes resulting from loose rivets is definitely prevented.

Experience with the thousands of installations we have made—some of them over ten years ago—testifies to the success and desirability of this construction.

Why not write these welded units into your next specification for new freight cars?

PULLMAN-STANDARD CAR MANUFACTURING CO.

CHICAGO • NEW YORK • CLEVELAND • WASHINGTON, D. C. • PITTSBURGH • BALTIMORE • BIRMINGHAM • WORCESTER, MASS.

San Francisco Sales Representative, Latham McMullin

Control The PENALTIES of HARD RIDING CARS

"Look at the Record"
MORE THAN
52,000 CAR SETS on 43 ROADS and Private Car Lines
In Just a Few Years

Representatives:

Miller-Lewis Railroad Equipment Co.
New York, N. Y.
Geo. H. Goodell, St. Paul, Minn.
Dudley A. Bonitz, Oxford, N. C.
Ivan L. Ward, San Francisco, Cal.
John S. Lemley, St. Louis, Mo.
Consolidated Equipment Co., Montreal
Canadian Appliance Co., Ltd., Montreal

BARBER STABILIZE YOUR TRUCKS

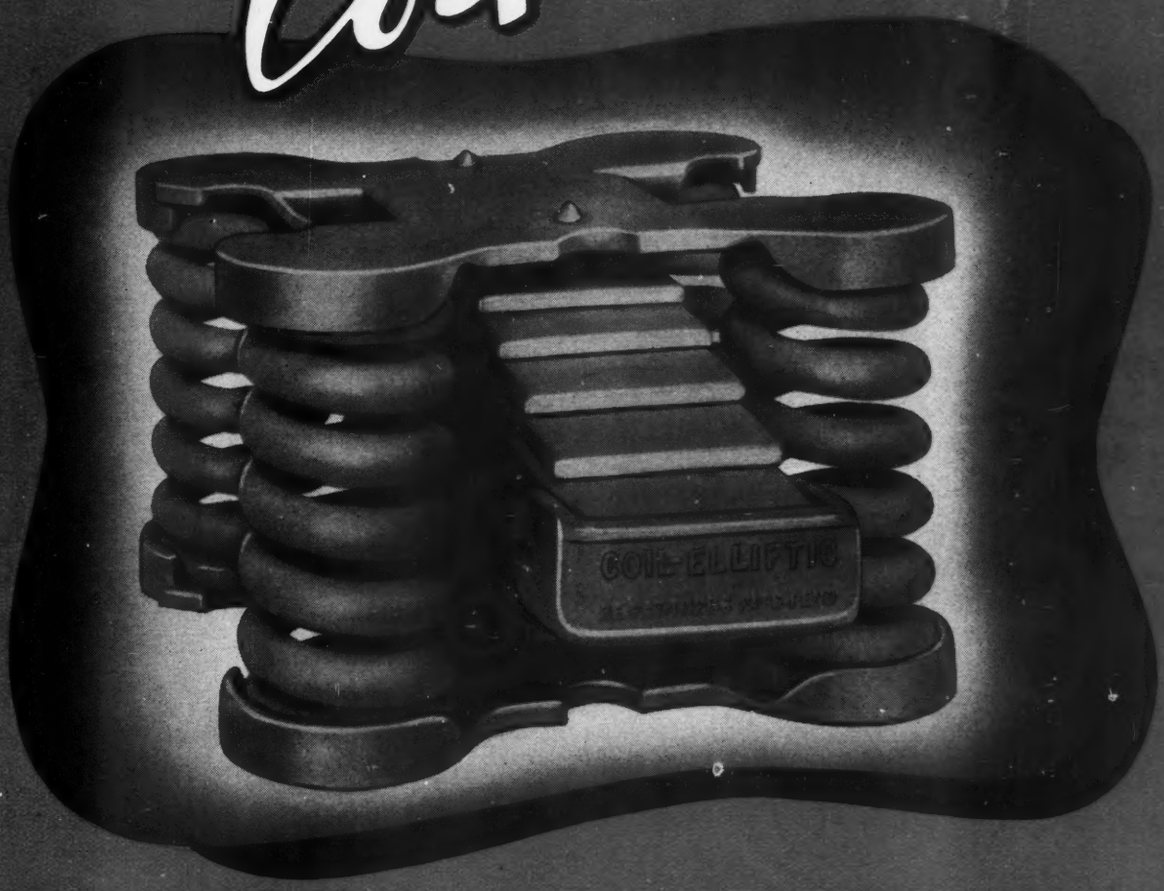
INCREASED Car Repair Costs — INCREASED Lading Damage Claims —INCREASED Roadbed Maintenance . . . due to HARD RIDING CARS . . . will add to your "headaches" in the strenuous period just ahead — UNLESS the bouncing action of truck springs is controlled — and the best way is to BARBER STABILIZE your trucks. Also for rebuilt equipment — when new side frames and bolsters are required — don't forget to install BARBER STABILIZED PARTS. Initial cost is low — *long, trouble-free life* is assured.

DESIGNED FOR USE WITH OR WITHOUT SPRING PLANKS — ALSO WITH OR WITHOUT LATERAL MOTION

STANDARD CAR TRUCK COMPANY
332 SOUTH MICHIGAN AVENUE CHICAGO, ILLINOIS

THE IDEAL SPRING GROUP FOR *Speedy-Increasing* HANDLING OF 1941's TRAFFIC...

"Coil-Elliptic"



"Coil-Elliptic" controlled spring groups—

1. Reduce freight damage claims by eliminating destructive car bounce.
2. Give long, effective service, cutting maintenance costs.

Save with "Coil-Elliptics" in 1941. Available for old or new trucks.

Protect Your Lading and Equipment with Symington Devices

THE SYMINGTON-GOULD CORPORATION

Works: ROCHESTER & DEPEW, NEW YORK

New York Chicago St. Louis Baltimore Boston San Francisco

In Canada: ADANAC SUPPLIES, LTD., Montreal, Que.

THOUSANDS OF PRESSED STEEL CARS *Carry the Load* IN DEFENSE TRANSPORTATION

Typical examples of modern freight cars built by Pressed Steel Car for dependable and economical operation.

WORKING under tremendous pressure Defense Industry must depend upon the railroads for the transportation of raw materials and finished products. Freight cars must be provided that will operate over long periods with little maintenance and to the entire satisfaction of shippers.

Pressed Steel Car Company has pioneered in the design and construction of all-steel railroad cars for over forty years. It maintains thoroughly efficient engineering and production departments capable of producing the most modern equipment and these facilities are at your disposal.

PRESSED STEEL CAR COMPANY, INC.

PITTSBURGH, PA.

Dear Mom:

Well, here it is another weekend and I'm not a General yet. But give me time.

Matter of fact, I have too much time on my hands—on evenings and weekends.

The nearest village is 5 miles away. All you find there is a general store, a garage and a canning factory—nowhere to go for any good clean fun, unless you drop in at a smoke-filled juke joint on the way.

Well, Mom, there's a big favor you can do me. The U. S. O. is trying to raise $10,765,000 to run clubs for us, outside of camp. Places with lounge rooms, dance floors, games, writing rooms. Places you can get a bite to eat without paying a king's ransom.

I know you don't have an idle million lying around, but if you could get the family interested and some of the neighbors, and if that happened all over the country, the U. S. O. could raise $10,765,000 overnight.

I'd appreciate it a lot, Mom, and so would every other mother's son in the U. S. Army and Navy.

Love,
Bill

They're doing their bit for you. Will you do your bit for them? Send your contribution to your local U. S. O. Committee or to U. S. O., Empire State Building, New York, N. Y.

OPEN YOUR HEART
OPEN YOUR PURSE
GIVE TO THE

U ★ S ★ O ★

UNITED SERVICE ORGANIZATIONS

These organizations have joined forces to form the U.S.O.: the Y.M.C.A., National Catholic Community Service, Salvation Army, Y.W.C.A., Jewish Welfare Board, National Travelers Aid Association.

IT'S ALL OVER THE YARD!

THERE'S probably not a spot in your yard where this outfit can't get in — and *work!* It's a "Caterpillar" Diesel D4 Tractor equipped with a Traxcavator . . . able to maneuver in close quarters, and to shift from point to point at a good speed on its own self-laid, endless tracks.

H. C. Clarke, Engineer, Maintenance of Way in the C., B. & Q. Yards, at Lincoln, Nebraska, says:

"The machine has been most successful. Its performance very satisfactory. And the cost very much lower than that involved by previous methods."

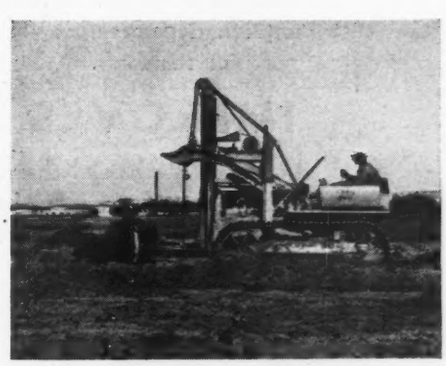
Scoop. Lift. Haul. Dump. That's the routine of this rig. And the jobs it does with its "elevator bucket" (which can be dumped at any point of its lift) are almost without end!

Among other things, it can slope and widen embankments . . . clean out ditches and cuts . . . excavate . . . mix and load materials . . . pile trash . . . fill around abutments . . . handle snow . . . haul off-track equipment. And, for heavy pushing, a bulldozer can be attached in a matter of minutes!

In other words, it will work not only in the yard but out beside the tracks. And out there, it'll do its job *at a fraction of the cost* of work-train operation . . . while it *keeps the track clear* for your regular traffic!

As for the useful life-span of this machine, you can be your own judge. There are "Caterpillar" Diesel Tractors with more than 20,000 hours of work behind them — and still going strong! Send for a copy of *"On the Tracks to Profit with Off-track Equipment."*

CATERPILLAR TRACTOR CO., PEORIA, ILL.



• The same "Caterpillar" Diesel D4 Tractor shown in the two pictures above. Here, however, the bucket has been removed and the bulldozer attached for leveling down refuse dumped from the cars in C., B & Q. Yards, Lincoln, Nebraska.

CATERPILLAR DIESEL

REG. U.S. PAT. OFF.

ENGINES AND ELECTRIC SETS

TRACK-TYPE TRACTORS • ROAD MACHINERY

Uniform Action . . . Uniformly Long Life . . .

● Cushioning action and energy absorption are **both** supplied by a single unit of the Holland Friction Volute Snubber. **No separate friction parts are used.**

That's why Holland Snubber Springs have a more uniform action than other snubbers in which the absorption depends upon the fit of several separate friction parts, even if the parts are manufactured to precision standards.

IMPROVED HOLLAND STYLE A-6 SNUBBER

Long life is a natural characteristic of the Holland Volute Snubber Spring, since it has greater friction area than other type snubbers. **Uniformly** long life has been accentuated in the Holland Style A-6 by the following improvements.

Holland Snubber Spring completely assembled ready to slip into spring group.

1. The development of a new process for heat-treating and quenching Volute Springs — a difficult problem because the spring section at the center of a Volute Spring is much thicker than at the top and bottom.
2. The use of Silico-Manganese Steel for greater resistance to fatigue and impact.
3. Special tapered mandrel coiling to provide positive build-up of absorption, and automatic take-up to compensate for wear.

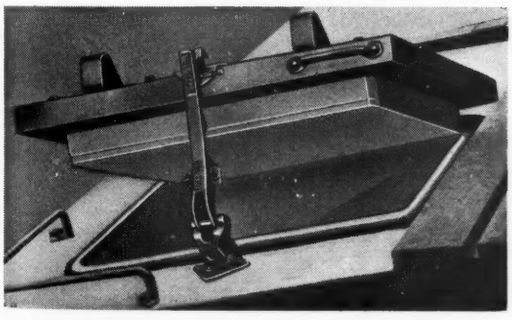
We invite you to test the improved Holland Volute Friction Spring on some of your trucks subjected to severe service.

HOLLAND COMPANY

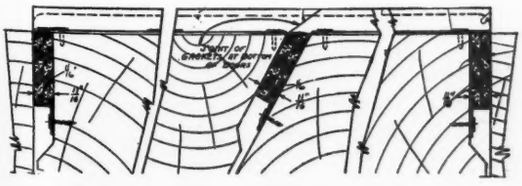
332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

ABOVE . . . *Picture of your Inspector vainly trying to find a "light-crack" in Refrigerator Car Equipped with*

CAP-KO Hatch and Door Closures



The Cap-Ko Closure for hatches eliminates the separate plug and the troubles and damages resulting when plugs get stuck.



An air-tight seal for refrigerator car doors; protects lading, reduces icing costs.

1. ELIMINATE NECESSITY OF CLOSE TOLERANCES.
2. PREVENT LIGHT CRACKS.
3. COMPENSATE FOR DOOR OR HATCH SWELL OR SHRINK.
4. ELIMINATE NECESSITY OF SPECIAL FITTING WORK ON EACH CLOSURE.
5. PREVENT ROTTING AT SILL AND DOOR POSTS.
6. NEVER STICK OR WEDGE.

A request will bring you data and information on Holland DOUBLE SEAL Closures for Refrigerator Car Hatches and Doors.

HOLLAND COMPANY

332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

NALCO Water Treatment

locomotive operation

"Several locomotive engineers at this terminal inform me they have never operated locomotives which steam as easily and give as good performance as with the present water treatment."

—Report of a Nalco Service Engineer

The locomotive engineer knows the results of Nalco Water Treatment. He finds that he is getting all the power his engine should deliver . . . that he is moving traffic on schedule . . . that the monthly mileage records of locomotives have been greatly increased.

NATIONAL ALUMINATE CORPORATION
PAIGE-JONES CHEMICAL COMPANY
6216 WEST 66TH PLACE CHICAGO, ILLINOIS

Nalco System

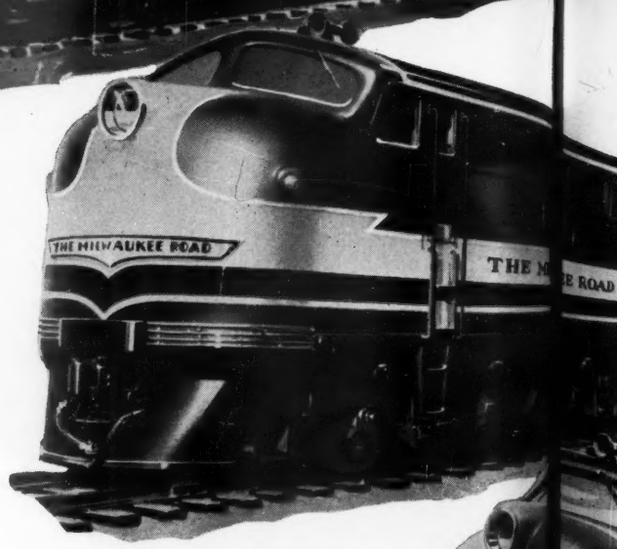
OF WATER TREATMENT

EMC Diesel FREIGHT POWER...

MORE WORK
FASTER SCHEDULES
LOWER COSTS
BIGGER PROFITS

Superior

★ ★ ★ ★ ★



WHERE ECONOMIES AND FASTER SCHEDULES ARE VITAL . . .

In these days of higher costs and ever increasing demands to speed up freight movements, the marked reductions in operating costs and the faster schedules made possible with EMC Diesel Freight locomotives are of vital importance to both the railroads and the Nation. Never before in all railroad history has any type of motive power provided so many possibilities for greater operating efficiency and economies.

IN EVERY PHASE OF PERFORMANCE

★ *Power*

GM
GENERAL MOTORS
DIESEL POWER

★ *Speed*

★ *Flexibility*

★ *Availability*

★ *Economy*

Diesel
FREIGHT LOCOMOTIVE
Advantages

E L C

Reliability under All Extremes of Loading, Schedules and Climate.

Hauls Greater Tonnage on Existing Schedules.

Hauls Same Tonnage on Faster Schedules.

Reduces the Number of Locomotives Required.

Minimizes the Necessity for Helper Service.

Improves Tunnel Operation with Smokeless Performance.

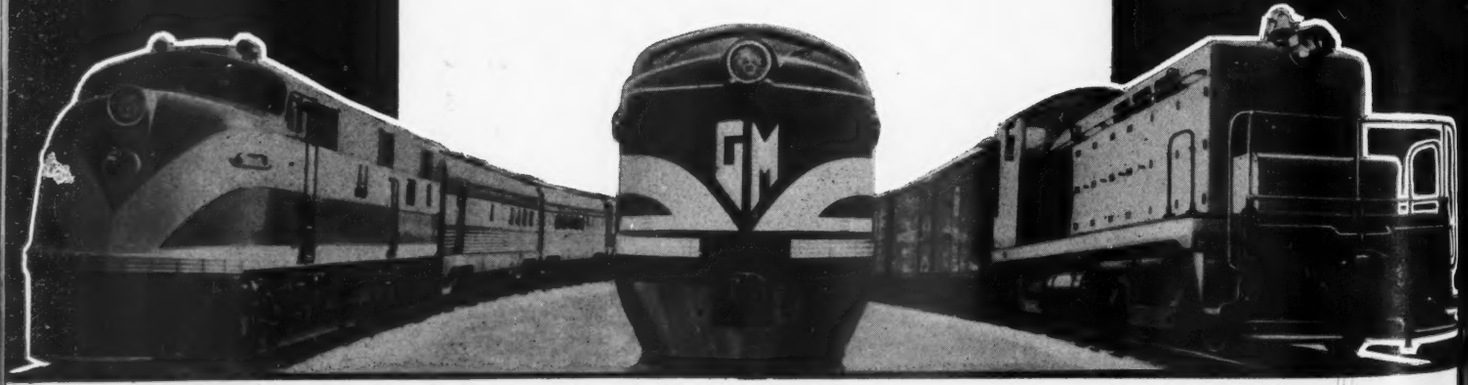
Less Wear on Wheels and Rails—Lowers Track Maintenance.

Reduces Cost of Operation and Equipment Maintenance.

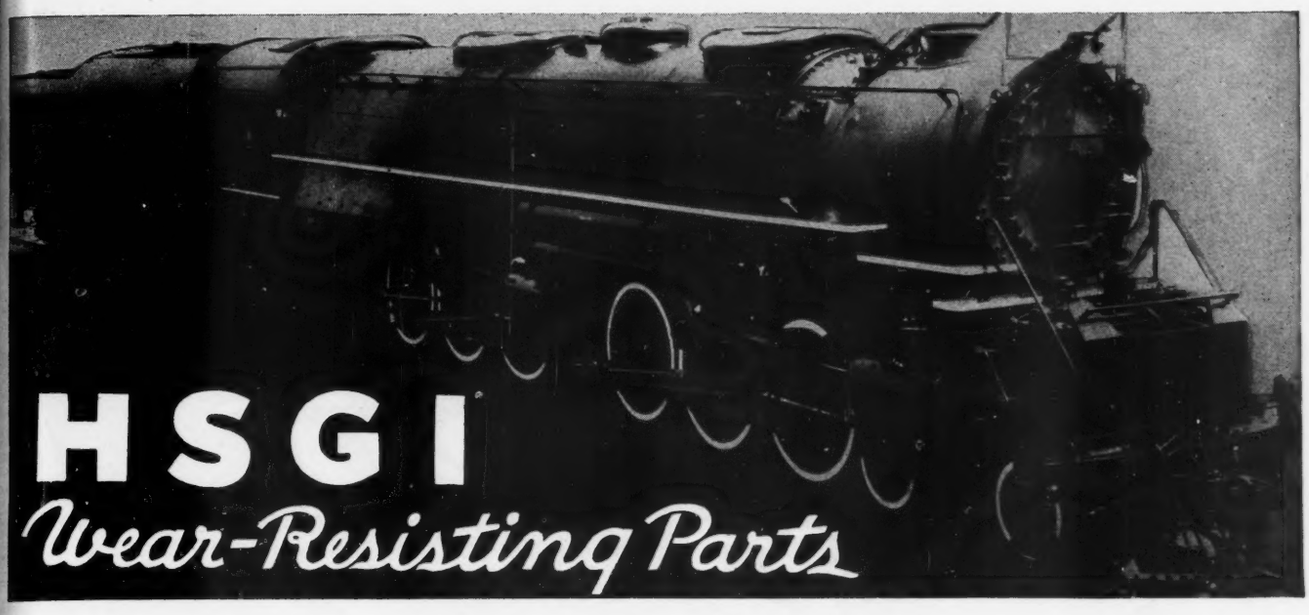
Protects Cars and Lading with Smoother Starts and Stops.

Dynamic Braking Handles Trains Down Heavy Grades Faster—Safer—with Minimum Brake Applications.

MORE WORK—LOWER COSTS
BIGGER PROFITS



ELECTRO-MOTIVE CORPORATION
SUBSIDIARY OF GENERAL MOTORS LA GRANGE, ILLINOIS, U. S. A.



Insure Better Performance

A record of locomotive performance is a record of the service built into its wearing parts.

The fact that the majority of modern locomotives are equipped with wear-resisting parts made from HUNT-SPILLER *Air Furnace* GUN IRON is therefore highly significant.

Significant — because modern locomotive performance records show high efficiency, high availability, low fuel consumption and economical maintenance.

If you are looking for the most economical performance specify all of the H S G I Parts listed below.

H S G I
Reg. U. S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings
Finished Parts
Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Valve Rings All Shapes
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

HUNT-SPILLER MFG. CORPORATION
V. W. Ellet Pres. & Gen. Mgr. / \ E. J. Fuller Vice-President

Office & Works
383 Dorchester Ave. South Boston, Mass.
Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.
Export Agent for Latin America:
International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER GUN IRON
Air Furnace


For
Best
Results

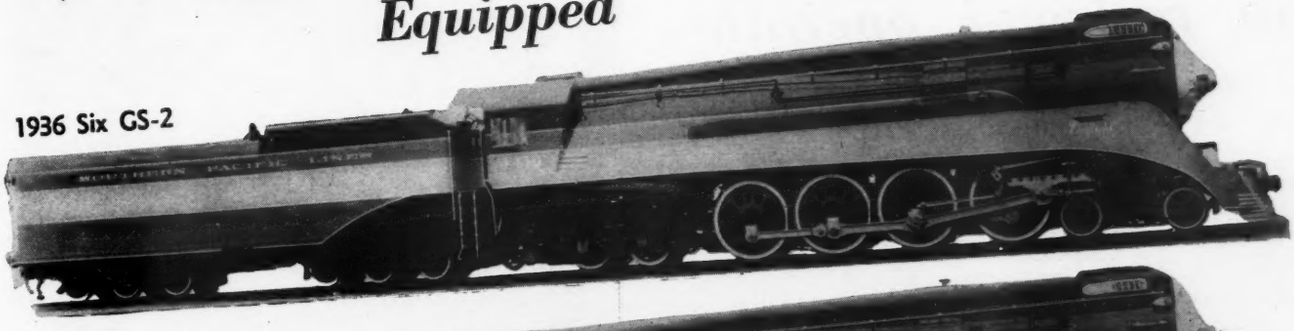
Three Orders of "Golden State" Type Locomotives

On the Southern Pacific

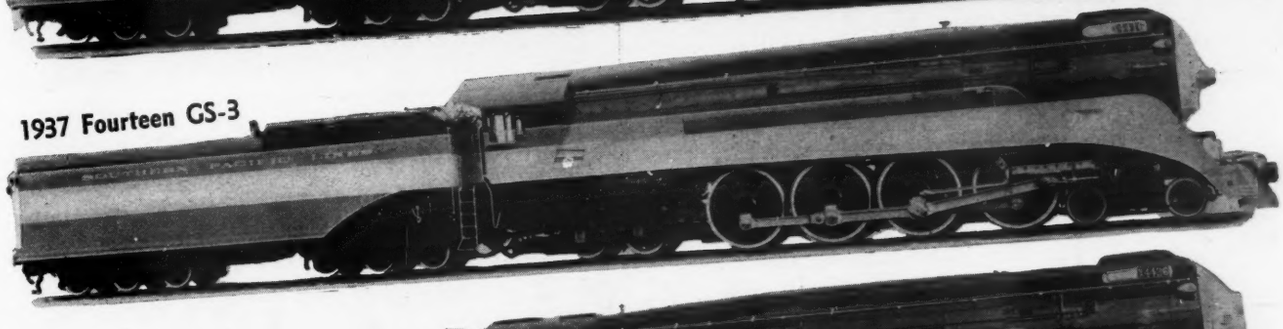
VALVE PILOT

Equipped

1936 Six GS-2



1937 Fourteen GS-3



1941 Twenty GS-4

40 of these modern high speed locomotives haul Southern Pacific money making passenger and merchandise trains. All are equipped with Valve Pilots as an assurance of efficient locomotive performance on the road. The tape tells the story.

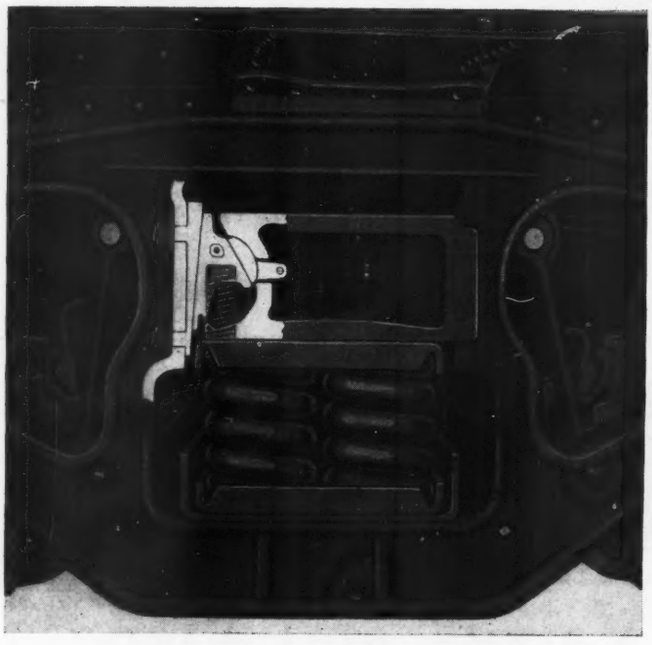
1941-ten GS-4. A fourth order—Ten more similar locomotives are now on order—Valve Pilot equipped? Certainly.

VALVE PILOT CORPORATION

230 Park Avenue, New York City

SNUB-UP

TYPE "E"



THE TRUCK OF FEW PARTS

BECAUSE Over 70% of All Freight Damage Occurs in Cars Loaded *Less than Capacity.*

Bolster springs designed for the maximum capacity of a car obviously cannot provide the fullest protection for half or light loads.

Under such conditions the decreased protection afforded by the springs should not be further reduced by any device that snubs on the DOWNWARD movement, thereby increasing the already excessive spring capacity.

The SNUB-UP UNIT, as its name implies, snubs only on the UPWARD movement of springs, preventing lading damage due to excessive spring oscillation, but at the same time permitting free downward movement and unretarded cushioning effect.

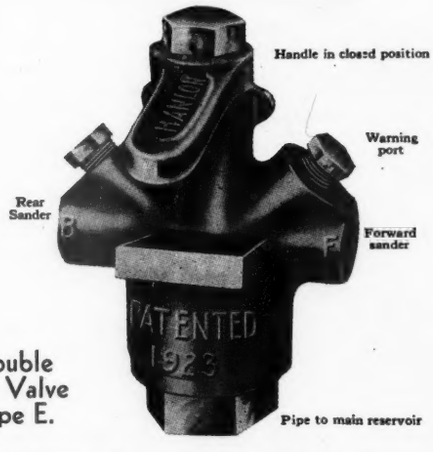
The performance of any A.A.R. Truck, conventional or spring plankless, can be improved 50 to 65 per cent by this outstanding development. Cost is moderate—only a slight change in the bolster casting at the ends is required—no change in side frames.

Applied to old cars as well as new, SNUB-UP UNITS will effect savings you can't afford to overlook.

PROTECT YOUR LIGHT LOADS —THE CAUSE OF OVER 70% OF LADING DAMAGE CLAIMS

RAILWAY TRUCK CORP.
Railway Exchange Bldg., Chicago

AIR VALVE FOR SANDERS



Double Air Valve Type E.

The Hanlon double air valve, controls the air to both forward and rear sanders. This valve has a composition stem with an oil treated leather washer, which prevents any leakage of air. The valve can be easily repaired by replacing the leather washer. This valve supplies the correct amount of air to the sanders and can be used with any style of sander.

Hanlon Locomotive Sander Co.
WINCHESTER MASSACHUSETTS

GET TOGETHER DEPARTMENT

GET TOGETHER DEPARTMENT

POSITION WANTED

RAILROAD PERSONNEL Executives interested in establishing centralized department can have services of experienced transportation man permanent or temporary. Address Box 562, RAILWAY AGE, 30 Church Street, New York, N. Y.

POSITION WANTED

A man with ten years experience developing, operating and maintaining rail flaw detector cars seeks a railroad interested in building and operating their own rail detector car. Capable of rail inspection in service and at mill; also rail data, cropping plant, generally assist rail program. College graduate, deferred draft. Now employed. Address Box 563, RAILWAY AGE, 30 Church Street, New York, N. Y.

Have You Changed Your Address?

Notice of change of address of subscribers should reach the office of *Railway Age*, 30 Church St., New York, ten days in advance to insure delivery of the following issue to new address. In sending notification of change always include the old address as well as the new.

Name.....

Old Address.....

New Address.....

Position.....**Company**.....

Index to Advertisers

June 28, 1941

UNIT TRUCK

APPLICATIONS ARE GROWING BY LEAPS AND BOUNDS

Unit Trucks were first exhibited at the A. A. R. Convention in Atlantic City, June 1937. They were exhaustively tested for over two years and approved for interchange in Jan. 1940. From that time on progressive railroad managers have realized the money saving possibilities of Unit Trucks with the following results.

Orders placed 1937 to 1939	12 car sets
Orders placed 1940	718 car sets
Orders placed *first six months* 1941	8,015 car sets
Orders placed, grand total to date	8,745 car sets

A Word to the Wise is Sufficient

Approved for interchange.

Full information as to licensees authorized to manufacture Unit Trucks will be furnished upon request.

UNIT TRUCK CORPORATION

140 CEDAR STREET NEW YORK, N. Y.

A Big Dividend Paying Policy

DURYEA CUSHION UNDERFRAMES are proving their efficiency in the elimination of damage to cars and lading on more than 25 leading railroads and car lines, who have placed over 40,000 Duryea equipped cars in service in the United States during the past 15 years.

The constantly increasing number of leading shippers who are demanding Duryea equipped cars for their shipments is convincing proof of the INSURANCE given against damage through shock, by the provision of long cushion travel, low end forces and reduction of slack, thereby protecting the owners of these cars from expensive maintenance costs and damage claims.

In addition to these savings must also be considered the increased DIVIDENDS resulting from the preference of shippers for carriers supplying Duryea equipped cars.

O. C. DURYEA CORPORATION
30 ROCKEFELLER PLAZA NEW YORK, N.Y.

DURYEA
Cushion Underframe

"ABSORBS THE SHOCKS WHICH ROB REVENUES"